



Development of Volleyball Game Model using Learning Media

Asep Suharta*¹, Dewi Endriani², Rahma Dewi³, Amir Supriadi⁴

¹Physical Education Health and Recreation, Faculty of Sports Science, Universitas Negeri Medan, Medan, Indonesia.

²³⁴Sports Coaching Education, Faculty of Sports Science, Universitas Negeri Medan, Medan, Indonesia.

Article Info

Article History :

Received : May 2022

Revised : June 2022

Accepted : June 2022

Keywords:

Game Model, Learning Media, Volleyball.

Abstract

The purpose of this study was to develop a volleyball game model using instructional media for junior high school students. The method used in this research is to use the R & D research method which is used to develop a product in the form of a volleyball game model and test the effectiveness of the product. The type of research used in this research is to use mixed methods (qualitative and quantitative) by using the t test on the effectiveness test. The data collection technique in this study was using a questionnaire questionnaire. The subjects used in this study were class VII students of SMP Gajah Madah Medan, totaling 40 students. The results of the small group trial were carried out on 15 junior high school students in class VII-1 with a very good category. The large group trial was conducted on 25 students of SMP Gajah Madah Medan class VII-2 with a very good category. The product effectiveness test was carried out by conducting pre-test and post-test with the results of the t-test $p < 0.005$, this result showed that there was a significant difference. The average pretest score before students use the game model using learning media is 5.42. And after the students were given treatment, namely the volleyball game model using learning media, the average post-test score was 7.71.



*Corresponding email : asepsuharta@unimed.ac.id

INTRODUCTION

The world of education at this time is increasingly advanced and growing rapidly, various types of improvements are made in order to advance the quality of education in this era. In an effort to improve quality in the world of education, various kinds of reforms are needed both in the development of the learning process, the completion of facilities and infrastructure, and the curriculum (Akhmad, 2016). Education is one of the important factors to direct and guide the future of each individual towards a better future. Quality education is needed, because it really supports the development of the younger generation to compete in the era of globalization. To improve the quality of education, teachers are required to be able to create and create more varied and innovative learning activities that can motivate students so that they can learn optimally both in independent learning and classical learning (Olahraga & Ade Herawati Gmailcom, 2020). The main purpose of education is to help students develop every potential that exists in themselves so that they can become human beings who are balanced between their personal and social lives. (Dwi et al., 2020). In life, learning is a necessity for everyone because by learning a person can understand and master something so that his abilities can be improved (Pasaribu Natas, 2016).

Education is a very important basic human need. Education has a duty to prepare human resources to build the nation and state. Education is a process of developing all aspects of the human personality which includes knowledge, values, attitudes and skills. The role of education is also very important as an agent of change, where education requires people to lead to discover their potential and facilitate them to achieve self-confidence in developing themselves, not

only that the results in the form of educational output must also be directed to create students who are skilled in social life and socialize. (Tandon et al., 2016) also emphasizes that the notion of education is a stage in the form of influencing students so that they can align themselves as well as possible in their environmental zone and thus will give birth to good changes and improvements in themselves that will be able to be useful economically. strong in living the life of society and nation. Physical education can also be interpreted as an educational process through physical activities designed to improve physical fitness, develop motor skills, knowledge, and healthy and active living behavior, sportsmanship, and emotional intelligence (Akhmad et al., 2022). The learning environment is carefully regulated to promote the growth and development of all domains, physical, psychomotor, cognitive, and effective for each student (Haryawan et al., 2021).

Physical education is important for students, because the current era of globalization has an impact on students being able to easily access information using communication devices such as mobile phones and tablet computers. Students can spend hours of their time just sitting still glued to their communication device (Verawati et al., 2021) this causes students to be lazy in moving, and becomes a problem for students because it can reduce their level of physical fitness, here physical education has an important role through aspects- aspects that are loaded such as; cognitive, affective, psychomotor in the learning process of physical education in schools. (Dewi & Verawati, 2022) Physical education, sports and health (PJOK) is an integral part of the overall education system which has an important role in developing aspects of physical fitness and developing various potentials (multiple intelligences) (Savitri

et al., 2020). The physical education learning process provides many opportunities for students to be directly involved in various learning experiences, one of which is the game. The game is one form of activity in physical education lessons at school. (Haryawan et al., 2021).

Learning will be successful if the material is conveyed to students and students are able to achieve goals in accordance with the competencies that have been set. Learning materials occupy a very important position in the overall teaching and learning activities, so they must be prepared so that the implementation of learning can achieve the target. (Haryanto, 2021).

In order to achieve good volleyball learning outcomes in accordance with the criteria of completeness to be achieved by physical education teachers in the physical education learning process, they can apply varied learning models so that student interest in learning activities remains high. Learning models and varied volleyball games can be produced from a development, namely; development of infrastructure, development of tools, development of ways of playing. To get the results of whether this development can be applied to students, it is necessary to test the developed model through small-scale and large-scale testing. Junior high school physical education essentially has an important meaning, role and function and strategy in an effort to create a healthy society. Because students in junior high school are a group that is in puberty, want to feel happy with something new and have vulnerabilities that need guidance and coaching. The explanation above shows the importance of a varied physical education learning process for junior high school students, seen from the characteristics of students entering adolescence.

It is necessary to apply a variety of game models to students in order to be able

to increase children's interest in learning more, so it is necessary to have learning innovations that are able to provide many choices for students so that students' interest in learning PJOK is getting better. Based on the problems that have been described in the introduction, researchers are interested in developing a volleyball game model using learning media that is more fun and in accordance with the characteristics of volleyball at the junior high school level.

METHODS

This type of research is research and development (Research and Development), namely the type of research used to produce certain products, and test the effectiveness of these products (Nisa & Pahlevi, 2021) This research and development procedure uses simplified (Suharta et al., 2021) steps. The research design of Borg and Gall development model development was then changed to a simpler one involving seven main steps: (1) preliminary study, (2) initial draft design, (3) initial draft validation and revision, (4) small-scale trial and revision, (5) large-scale trials and revisions, (6) final products, and (7) effectiveness tests. The subjects in this study were junior high school students at SMP Gajah Mada Medan and the product effectiveness test was carried out at SMP Al-Ulum Medan. The instrument used in this study used a questionnaire to state the feasibility of the product. The effectiveness test instrument in the form of questions to test the effectiveness of the product was carried out on the pre-test and post-test.

The data used in this study are qualitative and quantitative data adapted from (Kusumawardana & Sukadiyanto, 2013). The effectiveness test was carried out using a quasi-experimental method, namely by comparing the results of the

pretest with the results of the posttest. Data analysis using t test.

RESULTS

This study aims to develop a volleyball game model using learning media. The research conducted is expected to be able to become a treasury for PJOK teachers in teaching volleyball lessons. The results of expert validation carried out by experts related to the research that the researcher developed, namely material experts and media experts. The results of the expert's assessment of the development model draft can be seen in **Table 1** as follows:

Table 1. Expert Validation Result Data on the Product Draft.

No	Aspects	Percentage	Category
1	Material	83.27%	Very Good
	Contents	84%	Very Good
2	Display	82 %	Very Good
	Figure	83%	Very Good

Small-scale Trial Results The

Results of small-scale trials were carried out on class VII-1 students with a total of 15 people. The data from the results of the trials carried out can be seen in **Table 2** as follows:

Table 2. Data on Assessment Results on Small-Scale Trials

No	Aspect	Percentage	Category
1	Display	83.5%	Very Good
2	Learning	85.5%	Very Good
3	Contents/ Material	85.5%	Very Good

Result of Large-Scale Trial The

The result of a small-scale trial was conducted on 25th grade students of class VII-2. The data from the results of the

trials carried out can be seen in **Table 3** as follows:

Table 3. Data on Assessment Results on Small-Scale Trials

No	Aspect	Percentage	Category
1	Display	82.5%	Very Good
	Learning	83.5%	Very Good
	Content/Material	84 ,5%	Very Good
2	Display	80,5%	Very Good
	Learning	81,5%	Very Good
	Content/Material	87,5%	Very Good

From the results of small and large scale trials, it can be concluded that the results of small and large scale trial data is in the very good category. The results of small-scale and large-scale trials can be seen in **Figure 1**. Graphics of small and large-scale trials are as follows.

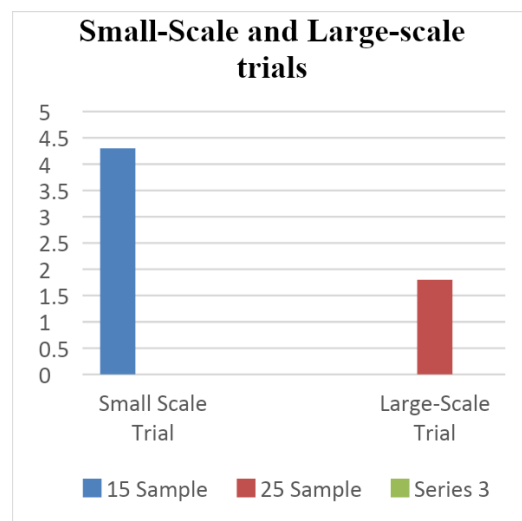


Figure 1. Graphic Small and Large Scale Tests Effectiveness

The effectiveness test in this study was carried out by implementing pre-test and post-test to determine the effect of the game model using learning media on students' understanding abilities and to strengthen the conclusion that the game

model product uses the learning media proper to use.

Implementation of the pre-test using multiple choice question sheets within 10 minutes. The post-test was carried out after the completion of the learning process using the game model using learning media with the aim of knowing the students' abilities after using the game model using the learning media.

Based on the results of the t-test, it can be seen that the significance value of $p < 0.005$. Because the significance value is < 0.05 , this result shows that there is a significant difference. The average pretest score before students use this learning media is 5.42. After the students used the game model using the volleyball learning media, the average post-test score was 7.71. effectiveness of the product is seen from the difference between the mean pre-test scores and the post-test mean scores on the use of

DISCUSSION

The results showed that there was a significant difference between the mean pre-test scores and the post-test mean scores. This proves that the development of a volleyball game model using learning media is effective in increasing students' understanding and interest in learning PJOK, especially volleyball material. This is in line with research conducted by (Endriani & Development, 2022) to develop a -based volleyball bottom passing model umbrella learning approach. The method used is research and development. This research was conducted in small-scale and large-scale trials. There are performance tests, written tests, and questionnaires to determine the effectiveness of the model developed on students' cognitive, psychomotor, and affective abilities. The research subjects used were 20 respondents for small-scale trials and 40 respondents for a large-scale

trial at the Faculty of Sports Science. Results of the effectiveness test model in the small group test obtained 0.75 psychomotor, cognitive results of 0.73 with high category obtained with n-gain and affective analysis was assessed with a Guttman scale of 84.37% and included in the category. The result of the large-scale psychomotor test is 0.74, cognitive result 0.76 high category was obtained by n-gain and affective analysis was assessed with a Guttman scale of 87.57% and included in the high category. Based on learning expert assessments, small-scale trials, and large-scale trials, this Umbrella learning model is declared effective in improving cognitive, psychomotor, and affective abilities in the Faculty of Sports Science.

This research (Suharta et al., 2021) aims to design basic digital-based volleyball techniques and skill test instruments using internet technology as its application. This research uses research and development design methods (Research and Development) used in this study is Borg and Bile development model with 7 steps of potential problems, data collection, product design, product validation, design revision, product trials, product revisions, usage trials, product revisions, and production. This learning product was developed in the design of a digital-based volleyball basic technique test instrument. The products of this research are 1) produce a basic volleyball game technical test equipment application products used on smartphones, 2) produce basic villi ball technical tools, namely easily accessible via the internet. From small-scale results trials conducted on 10 sports coaching education students study program (PKO) with a percentage obtained of 83% in "Eligible" category, and from the results of large-scale trials 15 health and recreation physical education students program (PJKR) and sports science prosi (IKOR) with a percentage of 84% obtained in the "Eligible" category. It could be

concluded that the digital-based volleyball basic technical skill test the instrument developed by the researcher can be used. In addition, the use of learning media is also one of the important factors in the development that researchers have developed, this is in line with research conducted by (YUSMAWATI et al., 2020). The attractiveness of students to the subject matter delivered interactively should be able to improve the quality of learning. (Haryanto, 2021) stated that the media is a communication that involves two parties, namely between the source and the recipient. Learning media is useful for facilitating interaction between teachers and students so that learning activities are more effective and efficient. Various kinds of media variations to convey material are made in order to facilitate the learning process. Media is a vehicle that can facilitate the delivery of material in the process of teaching and learning activities.

(Ajid et al., 2019) stated that learning media is an important tool in learning so that messages or learning materials can be well received by learners. Learning media can provide students with a common experience about events in the surrounding environment, and allow direct interaction with teachers, the community, and their environment. Through media that is packaged in an attractive way, students can be amazed, so that the level of concentration on delivering the material will be higher. It is intended to achieve better results than without using learning media. (Putro & Lumintuarsa, 2013) stated that to determine the quality of learning media, it must be seen from several criteria as follows: (1) Quality of material and objectives which include accuracy, completeness, importance, balance, attractiveness, fairness, and suitability to the situation of students; (2) The quality of learning, which includes providing learning opportunities, providing for learning, motivating quality, instructional

flexibility, relationships with other learning programs, the quality of tests and assessments can have an impact on students, and can have an impact on teachers and the learning process.

Research conducted by (Putro & Lumintuarsa, 2013) shows that the basic volleyball technique learning media for junior high school students is effective in increasing students' knowledge in the process of teaching and learning activities on volleyball material. This study aims to produce learning media for volleyball basic techniques for junior high school students. The study was conducted in 3 junior high schools, while the product quality assessment involved 3 physical education teachers. The results of the test of the effectiveness of learning media showed an increase in the mean of the pretest with the posttest of 3.2. From the results of previous studies which are in line with the research that the researchers developed, it can be seen that the game model and learning media are important factors in attracting students' interest in learning PJOK, especially volleyball material.

CONCLUSION

From the results of data analysis that researchers have presented on the results of research and discussion, it can be concluded that: (1) the resulting product is indispensable for teachers and students in teaching and learning PJOK. (2) The resulting product is in accordance with the characteristics of PJOK learning for junior high school students. (3) The game model developed is used as a method in teaching volleyball learning. (4) The use of learning media as a tool to teach the volleyball game model.

ACKNOWLEDGEMENT

Research thanks go to the Medan State University Research and Service Institute (LPPM UNIMED) which has assisted in providing research funds. It is hoped that the results achieved can make a positive contribution to the progress of the State University of Medan (UNIMED). And the researcher would like to thank everyone who was involved in this research.

REFERENCES

- Ajid, O. N., Komarudin, K., & Mulyana, M. (2019). Pengaruh Metode PETTLEP dan Media Audio Visual Terhadap Hasil Belajar Keterampilan Jurus Tunggal Baku Pencak Silat. *Jurnal Terapan Ilmu Keolahragaan*, 4(2), 107–116. <https://doi.org/10.17509/jtikor.v4i2.18989>
- Akhmad, I. (2016). Standar kompetensi mata pelajaran pjok. Kemendikbud Direktorat Jenderal Guru Dan Tenaga Kependidikan, 1–8.
- Akhmad, I., Suharjo, S., Hariadi, H., Dewi, R., & Supriadi, A. (2022). The Effects of Learning Strategies on Senior High School Students' Motivation and Learning Outcomes of Overhead Passing in Volleyball. *International Journal of Education in Mathematics, Science and Technology*, 10(2), 458–476. <https://doi.org/10.46328/ijemst.2291>
- Dewi, R., & Verawati, I. (2022). The Effect of Manipulative Games to Improve Fundamental Motor Skills in Elementary School Students. *International Journal of Education in Mathematics, Science and Technology*, 10(1), 24–37. <https://doi.org/10.46328/ijemst.2163>
- Dwi, I., Wati, P., & Jaenudin, M. A. (2020). Dasar Siswa Sekolah Dasar Kelas Bawah. 8, 50–57.
- Endriani, D., & Development, R. (2022). Development of a Lower Passing Model for Volleyball Based Umbrella Learning Approach To cite this article : Development of a Lower Passing Model for Volleyball Based Umbrella Learning Approach.
- Haryanto, A. D. (2021). Pengembangan Media Pembelajaran Bola Voli Untuk Siswa Sekolah Kejuruan. *Jambura Journal Of Sports Coaching*, 3(1), 23–32.
- Haryawan, M. A., Sapulete, J. J., & Fauzi, M. S. (2021). Pengembangan Model Permainan Bola Voli “Voli Target (Vorget)” Dalam Pembelajaran Penjasorkes Pada Siswa Kelas Viii Smp Negeri 3 Kuaro. 2, 38–50.
- Kusumawardana, D., & Sukadiyanto, S. (2013). Pengembangan Media Pembelajaran Vcd Tenis Lapangan Bagi Siswa Sekolah Dasar. *Jurnal Keolahragaan*, 1(2), 120–129. <https://doi.org/10.21831/jk.v1i2.2568>
- Nisa, S., & Pahlevi, T. (2021). Pengembangan instrumen penilaian HOTS berbantuan quizizz pada mata pelajaran kearsipan SMK. *EDUKATIF: Jurnal Ilmu Pendidikan*, 3(5), 2146–2159. <https://edukatif.org/index.php/edukatif/article/view/756>
- Olahraga, J. L., & Ade Herawati Gmailcom, K. P. E. (2020). Student learning motivation in improving the learning of down passing volyball in eight class of SMPN 1 Pondoksalam Purwakarta. 2(1), 1–9.
- Pasaribu Natas, A. M. (2016). Program Studi Pendidikan Jasmani Kesehatan Dan Rekreasi Universitas Nusantara PGRI Kediri 1. *Jurnal Sportif*, 2(2), 76–84.
- Putro, D. E., & Lumintuarsa, R. (2013). Pengembangan Media Pembelajaran Teknik Dasar Bola Voli Untuk Siswa Sekolah Menengah Pertama. *Jurnal Keolahragaan*, 1(1), 37–48. <https://doi.org/10.21831/jk.v1i1.2344>
- Savitri, D. A. P., Kanca, I. N., & Dharmadi, M. (2020). Pengaruh Model Pembelajaran Kooperatif Terhadap Hasil Belajar Bola Voli Ditinjau Dari Motivasi Belajar. ... *Pembelajaran ...*, 10(1), 2020. https://ejournal-pasca.undiksha.ac.id/index.php/jurnal_tp/article/view/3393
- Suharta, A., Supriadi, A., & Nurkadri, N. (2021). Design of Digital Based Volleyball Basic Techniques Test Instrument. *Budapest International Research and Critics Institute (BIRCI-Journal): Humanities and Social*

- Sciences, 4(2), 3170–3176.
<https://doi.org/10.33258/birci.v4i2.2049>
- Tandon, P. S., Tovar, A., Jayasuriya, A. T., Welker, E., Schober, D. J., Copeland, K., Dev, D. A., Murriel, A. L., Amso, D., & Ward, D. S. (2016). The relationship between physical activity and diet and young children's cognitive development: A systematic review. *Preventive Medicine Reports*, 3, 379–390. <https://doi.org/10.1016/j.pmedr.2016.04.003>
- Verawati, I., Dewi, R., & Ritonga, D. A. (2021). Development of Modification of Big Ball Game with Play Approach in Order to Develop Basic Movement Skills in Elementary School Students. *Budapest International Research and Critics Institute (BIRCI-Journal): Humanities and Social Sciences*, 4(2), 3186–3192. <https://doi.org/10.33258/birci.v4i2.2051>
- Yusmawati, Y., Rihatno, T., & Rismawanti, R. (2020). Meningkatkan Hasil Belajar Gerak Dasar Melempar Dengan Media Audio Visual Pada Siswa Kelas Iii Sdn 03 Jelambar Baru Jakarta Barat. *Jurnal Segar*, 8(2), 80–89. <https://doi.org/10.21009/segar/0802.04>