

## Development model exercise passing top volleyball based game

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### ABSTRACT

*This study aims to determine the results of the development of a game-based volleyball overhead passing training model. The method used in this study is ADDIE which consists of 5 stages, namely Analysis, Design, Development, Implementation, and Evaluation. The subjects of this study were 55 students with a small scale of 15 students from State High School 2 Plakat Tinggi, a large scale of 20 students from State High School 1 Plakat Tinggi and 20 students from State Vocational High School 1 Plakat Tinggi. Data collection was generated from interviews, questionnaires, observations, and documentation. The data that has been obtained was then analyzed by reducing the data and presenting it in descriptive form, categorizing it according to the Likert scale. The results of the study obtained 20 game-based volleyball overhead passing training models. Based on the results of validation from 3 experts, namely practitioner experts, academic experts, and trainer experts, an average score of 0.03 was obtained which can be stated as valid. Then the results of the questionnaire for students at State High School 2 Plakat Tinggi 2 were 89.91%, students at State High School 1 were 91.75%, and State Vocational High School 1 were 91.41%. So, from the two large-scale trial scores, the final score was 91.58%. From these results, the volleyball overhead passing training model based on games is very good and can be used for volleyball extracurricular students at school.*

**Keywords:** Model Exercise, Passing Top Volleyball, Game

### ARTICLE INFO

#### Article History:

Accepted : 17th February 2025  
Approved : 23th May 2025  
Available Online May 2025

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## INTRODUCTION

Sports are physical activities that play an important role in improving a person's physical fitness, health, and motor skills. Various sports are developing rapidly with the aim of not only achieving but also for recreation and education. One of the most popular sports and is in great demand by a person is ball volleyball ([Muslimin & Helensi, 2022](#); [Septi Sistiasih et al., 2022](#)). Volleyball is not only played internationally, but also in schools, communities, and other recreational activities ([Destriana et al, 2021](#); [Yusup Jamil et al., 2022](#)). The popularity of volleyball requires effective training methods to improve player skills, specifically in the basic technical aspects that are the foundation of the game.

Volleyball has various basic techniques that must be mastered by players in order to play effectively and competitively ([Muslimin et al., 2023](#)). These basic techniques include serving, passing, smashing, and blocking ([Karisman & Supriadi, 2022](#); [Keswando et al., 2022](#); [Nira &](#)

[Nanang, 2024](#)). Where these techniques have a crucial role in game strategy. Among these techniques, passing is a fundamental skill that greatly determines success in building a team's attack and defense ([Aslamiya & Machfud Irsyada, 2023](#)). Therefore, mastery of passing techniques Which Good very required for every player ball volleyball, Good beginner and also professional atheletes ([Junaidi & Muharram, 2021](#)). One of the passing techniques that needs to be mastered is the overhead pass.

The overhead pass is one of the most important techniques in volleyball because it is the basis for developing an effective attack ([Indrakasih et al., 2022](#); [Hermaya et al., 2024](#); [Mardila et al., 2024](#)). This technique is applied to receive the ball from a teammate or opponent and direct it accurately to the tosser to prepare for an attack ([Siregar et al., 2021](#)). Good mastery of the overhead pass requires repeated practice with an interesting model so that players not only understand the technique theoretically but are also able to implement it well in the match ([Suri et al., 2022](#)).

However, based on the facts in the field there are problems in extracurricular activities at State High School 2 Plakat Tinggi, State High School 1 Plakat Tinggi, State Vocational High School 1, namely that 75% of students out of a total of 55 students who participate in extracurricular activities have difficulty when doing overhead passes. This happens because during practice students only use conventional training models, the training models applied are less varied, this results in students' ability to do overhead passes being less than optimal and during practice students are less enthusiastic about following the training program given. Based on the results of field observations, it is necessary to develop a varied overhead passing training model to be implemented in the training program.

Several previous studies have developed passing exercises for volleyball, such as [Dogho et al \(2021\)](#) . develop training models passing on the ball volleyball where This produces a category that is feasible to be implemented in physical education learning. However, this research design only focuses on product creation. Then [Wisudarsih et al \(2024\)](#) developed a volleyball overhead passing training model based on audio-visual media, where this development was categorized as very feasible to be implemented. Continued by [Ina et al \(2022\)](#) who stated that the overhead passing training model can be used as an alternative learning activity for students in learning both in terms of theoretical concepts and practical implementation. However, this study focused on one model, namely the ball throwing and catching model, stated that the application of the drill method improved students' overhead passing abilities compared to the paired overhead passing method. In this study, only the drill method was superior in improving overhead passing abilities. Based on previous research, there

has been no research that has developed a more varied volleyball overhead passing training model. Such as a game-based overhead passing training model to help students motivate and improve their volleyball overhead passing performance.

A systematically designed and game-based overhead passing training model can create a dynamic environment and motivate students to continue to develop, by emphasizing aspects of coordination, reaction speed, and a better understanding of game strategies. The reason researchers use this training model is to provide students with a more contextual playing experience, increase student engagement, and optimize learning technique passing on in a way more effective and fun. Based on the description above, this study aims to determine the results of the development of a game-based volleyball overhead passing training model.

## METHODS

The method used in this study is the ADDIE method (*Analysis, Design, Development, Implementation, Evaluation*), where the method used aims to produce a volleyball overhead passing training model that has been designed in stages. The researcher's reasons use method development ADDIE because of own superiority at every stage of the systematic process. The subjects of this study were 55 extracurricular volleyball students, in general. The details consist of 15 students at State High School 2 Plakat Tinggi as subjects of small-scale trials, 20 students at State High School 1 Plakat Tinggi and 20 students at State Vocational High School 1 as subjects of large-scale trials. According to Branch in ([Mesra, 2023](#)) ADDIE consists of 5 stages, namely ( *Analysis, Design, Development, Implementation, and Evaluation* ).

### *Analysis*

At this stage, there are two stages of analysis, namely performance analysis which is carried out to identify and classify the problems faced by extracurricular students at State High School 1 Plakat Tinggi, State High School 2 Plakat Tinggi, and State Vocational High School 1 regarding overhead passing of the volleyball and passing that has been implemented in schools so far, after it finds a solution by developing a game-based training model. Then, the second analysis is analyzing the needs by determining what training models can be used by researchers and determining the facilities and infrastructure to be used.

### *Design*

On stage This, researcher make design model the exercise that will be developed and media navigation flow. At this stage, the researcher designed a game-based volleyball overhead

passing training model of 20 models.

### ***Development***

At this stage, after designing 20 models of game-based overhead passing exercises, the researcher determines the tools to be used, then validates the experts such as lecturers and teachers (trainers). Then, the results of the validation, both criticism and suggestions, are used as improvement materials for researchers to produce a comparison of the initial product and the product after revision; after meeting the good criteria, the product can be used in the implementation stage.

### ***Implementation***

At this stage, it begins with a small-scale implementation of 15 students at State High School 2 Plakat Tinggi. If the product gets a decent response at the trial stage, then the next stage is implementation scale big as much as 20 students State High School 1 Plakat Tinggi and 20 students State Vocational High School 1 Plakat Tinggi. On this stage comments and suggestions from teacher and students can be considered for product revision so that the product can be even better.

### ***Evaluation***

At this stage, researchers assess and measure the products produced through expert validation questionnaires and practicality questionnaires by students to determine the level of product feasibility. Then, revise the product according to the evaluation results or needs. cannot be fulfilled. So that 20 game-based overhead passing training model products that have been tested are effective and suitable for general use.

The data collection technique used by the researcher is an interview conducted at the analysis stage where this aims to find out the problems to be studied. Then the questionnaire (survey) where the written questionnaire questions are given to athletes or students who participate in training at State High School 1 Plakat Tinggi, State High School 2 Plakat Tinggi, and State Vocational High School 1 Plakat Tinggi. After that, direct observation was carried out by extracurricular students in carrying out passing on with use various type method the game that different during the training activities. Furthermore, the documentation used to collect data and information in the form of photos and videos that can help in the research.

The data that has been collected is then analyzed, such as interview data, observations, and documentation is presented in the form of criticism, input, and suggestions to modify or improve the product being developed. Then the questionnaire data is presented in the form of numbers obtained from the questionnaire and measured using a Likert scale after which the

data is categorized according to the Likert scale assessment. So that researchers can draw conclusions from the data.

## **RESULTS AND DISCUSSION**

### ***Results***

#### ***Analysis***

The results of the initial analysis conducted on extracurricular activities at State High School 1 Plakat Tinggi, State High School 2 Plakat Tinggi, and State Vocational High School 1 Plakat Tinggi showed that there were specific problems that related to overhead passing. Students feel bored during practice because some of them are not fluent, and some others still cannot do overhead passes. This is due to the fact that the coach did not do a game-based overhead passing training model because they only did regular overhead passing training in a fairly short time. This needs analysis aims to identify the needs of students and researchers. This includes extracurricular activities at State High School 1 Plakat Tinggi, State High School 2 Plakat Tinggi, and State Vocational High School 1 Plakat Tinggi, as well as the needs of extracurricular coaches for the development of a game-based volleyball overhead passing training model.

#### ***Design***

Researchers look for ideas for training models by looking at existing designs and changing them to their liking. Then they take some existing training model designs and develop them. Researchers look for ideas by looking at previous training model designs and connecting them into new ideas. Researchers collect some existing designs and submit them to get new concepts. Then create a design for a volleyball overhead passing training model based on the game with the third stage in process development model. Design previously updated and add Instruments used in the overhead passing training model. The training models developed by the researcher are: (1). Paslemkap game, (2). Pastulbalsang game, (3). Pargetcon game, (4). Pasber game, (5). Pasquad game, (6). Paset game, (7). Pasima game, (8). Pasmadur game, (9). Pasbarjazi game, (10). Pasnari game, (11). Pasega game, (12). Pasempat game, (13). PastukV game, (14). Paslaziza game, (15). Pasbolar game, (16). Paspatcozi game, (17). Pasanglan game, (18). Pasmintol game, (19). Paslompung game, (20). Paslartol game.

#### ***Development***

In this study, the researcher developed a volleyball overhead passing training model based on a game according to the design that had been made. The stages that the researcher took in developing a volleyball training model based on a game were: 1) making a design by making 20 game-based overhead passing training models. 2) Determining the tools to be used,

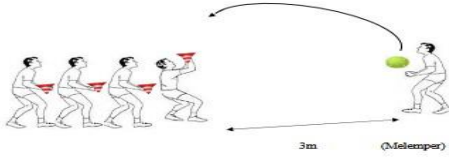
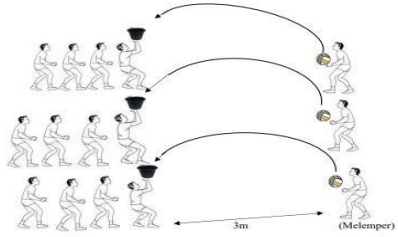
3) Conducting a review or validation by involving expert lecturers and teachers, 4) Making improvements based on expert advice so that a comparison of the initial product and after revision can be seen.

**Table 1.** Results Analysis CVI and CVR

Question	E1	E2	E3	no	N	N/2	ne- (N/2)	CVR	Criteria
1	4	4	4	3	4	2	1	0.5	Valid
2	3	4	4	2	4	2	0	0	Valid
3	4	3	3	1	4	2	- 1	- 0.5	Valid
4	3	4	4	2	4	2	0	0	Valid
5	3	4	4	2	4	2	0	0	Valid
6	4	3	4	2	4	2	0	0	Valid
7	3	3	3	3	4	2	1	0.5	Valid
8	4	3	4	2	4	2	0	0	Valid
9	3	3	4	1	4	2	- 1	- 0.5	Valid
10	4	4	3	2	4	2	0	0	Valid
11	4	4	4	3	4	2	1	0.5	Valid
12	3	4	3	1	4	2	- 1	- 0.5	Valid
13	4	3	4	2	4	2	0	0	Valid
14	3	4	4	2	4	2	0	0	Valid
15	4	4	4	3	4	2	1	0.5	Valid
Amount	53	56	56			Amount		0.5	Valid
Average	3.5	3.7	3.7			Average		0.03	Valid
average		3,633							

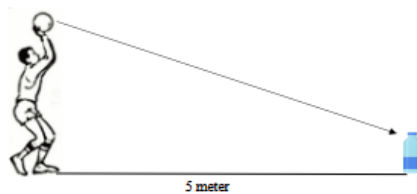
Based on the table 1 above, the results of the validation of the model developed by the three validators state that all training models developed are valid so that they can be continued to the next stage of the research process.

**Table 2.** Results Revision Product Expert Practitioner Ball Volleyball

Before	After
<p>3. Permainan Pascon (Passing Cone)</p>  <p>a. Peralatan:</p> <ol style="list-style-type: none"> <li>1) Bola Tennis</li> <li>2) Lapangan Voli</li> <li>3) Stopwatch</li> <li>4) Peluit</li> <li>5) Cone</li> </ol> <p>b. Pelaksanaan permainan:</p> <ol style="list-style-type: none"> <li>1) Siswa melakukan tangkap bola</li> <li>2) Kemudian siswa yang sudah menangkap bola bergantian untuk melempar bola ke teman</li> <li>3) Selanjutnya siswa yang sudah melempar langsung ikut baris lagi untuk menangkap bola</li> <li>4) Dilakukan terus menerus dengan waktu 1 menit</li> </ol> <p>c. Penilaian:</p> <ul style="list-style-type: none"> <li>- Jumlah ketepatan yang digunakan selama penyelesaian program</li> </ul>	<p>Nama : Permainan Pasber (Passing ember)</p>  <p>Waktu : 10 menit</p> <p>Alat : 3 Bola voli, Lapangan Voli, Stopwatch, Peluit, 3 ember plastic</p> <p>Pelaksanaan :</p> <ol style="list-style-type: none"> <li>1. Siswa melakukan tangkap bola</li> <li>2. Kemudian siswa yang sudah menangkap bola bergantian untuk melempar bola ke teman</li> <li>3. Selanjutnya siswa yang sudah melempar langsung ikut baris lagi untuk menangkap bola</li> <li>4. Kemudian dilakukan oleh siswa lainnya secara bergantian</li> </ol> <p>Penutup : Senam dinamis dan senam statis, setelah itu berdoa</p>

Cone replaced by bucket, baseball replaced by ball volleyball, pictures added, and writing improved,

## 2. Permainan Pargetol (Passing Bertarget)



## a. Peralatan:

- 1) Bola voli
- 2) Target botol 600ml Yang Berisi Pasir
- 3) Stopwatch
- 4) Lapangan Voli
- 5) Peluit

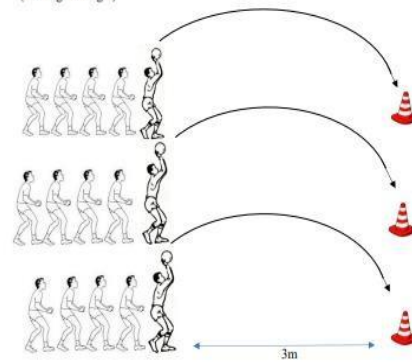
## b. Pelaksanaan Permainan

- 1) Siswa melakukan sikap awal dengan posisi kuda-kuda teknik *passing* atas
- 2) Siswa menghadap kearah target yang sudah diberi botol
- 3) Siswa melakukan *passing* atas kearah target yang sudah diberi botol
- 4) Dilakukan terus menerus sampai waktu 1 menit

## c. Penilaian:

- 1) Jumlah ketepatan yang digunakan selama penyelesaian program

Nama : Permainan Pargetol  
(Passing Bertarget)



Waktu : 10 menit

Alat : Bola voli, Cone, Stopwatch, Lapangan Voli, Peluit

Pelaksanaan :

1. Siswa melakukan sikap awal dengan posisi kuda-kuda teknik *passing* atas
2. Siswa menghadap kearah target yang sudah diberi cone
3. Siswa melakukan *passing* atas kearah target yang sudah diberi cone
4. Dilakukan terus menerus secara bergantian

Penutup : Senam dinamis dan senam statis, setelah itu berdoa

The target was replaced with a larger one, the picture was added, the target was replaced with a cone, and the writing was corrected.

**Table 3.** Results Revision Product Expert Coach Ball Volleyball

No	Expert	Part Which revised	Comment & Suggestion
1	Practitioner Ball Volleyball	Explain the names of the Plus, the games with the game image form characteristics of the Picture made interesting students. Explain the names of the tools used	
2	Academics Ball Volleyball	- -	Making the questionnaire more detailed and systematic Worth continuing research
3	Coach Volleyball	- -	Studied need volleyball students in doing exercise passing on

This study used three experts, each of whom had a national volleyball license, namely expert practitioners, where there were 5 inputs such as criticism and suggestions for improvements as shown in Table 2. Then academic experts, the results of the product assessment from academic experts showed that the training model designed as a whole was very good and did not... There are comments and suggestions. After that, the volleyball coach expert made 3 comments and suggestions that were used as material revision researcher in accordance with table 3. With fill in consioner produce the average CVR assessment score (table 1) was 0.03 and was included in the "valid" category based on these results, can concluded that model passing practice on ball volleyball based on game can be used for small-

scale and large-scale trials.

### ***Implementation***

After the expert validation was completed and was fit for testing, the researcher conducted a small-scale trial with the developed training model given instructions to students. In addition, researcher make recording video for show results study student ball volleyball to expert. Researchers conducted a small-scale trial at State High School 2 Plakat Tinggi located in Musi Banyuasin by conducting a trial on 15 students. Then the current situation explaining the material, students pay close attention, and the implementation of the explanation used in this exercise model is very easy to understand, it appears that the condition of the students during the trial pays close attention to the exercise model shown, after which the students fill out the questionnaire that has been provided. Student questionnaire results, test try scale small to obtain score 808 from maximum 900, This shows that the game-based volleyball overhead passing training model is 89.91% effective in volleyball games. After the small-scale trial process was completed, the researcher then conducted a large-scale trial, and the process was recorded so that experts could see the progress of the developed training.

The researcher consulted again with experts to assess whether the product was suitable for use as training material. The researcher conducted a large-scale trial at State Vocational High School 1 Plakat Tinggi and State Vocational High School 1 Plakat Tinggi located in Musi Banyuasin by conducting a trial on 40 students. Then the situation when explaining the material, students were very attentive and the implementation of the explanation used in this training model was very easy to understand, it appeared that the condition of the students during the trial was very attentive to the training model shown, after that the students filled out the questionnaire that had been provided. The results of the student questionnaire obtained an average score at State Vocational High School 1 Plakat Tinggi of 91.75% and an average score at State Vocational High School 1 Plakat Tinggi of 91.41%. From these two schools, the average score for large-scale trials was 91.58%. This shows that the development of the passing training model on ball volleyball based on game have quality Which very Good And can be used.

### ***Evaluation***

At this stage, the results of the assessment and conclusions. The questionnaire scores collected from expert practitioners were 86%, academic experts were 88%, and trainer experts were 93%. Then the results of the questionnaire for students of State High School 2 Plakat Tinggi were 89.91%, students of State Vocational High School 1 Plakat Tinggi were 91.75%, and State Vocational High School 1 Plakat Tinggi were 91.41%. So from the two large-scale

trial scores, the final score was 91.58%. After that, the scores obtained were categorized based on the Likert scale assessment as in table 4 below:

**Table 4.** Evaluation Scale Likert

Percentage	Category	Meaning
0- 30%	Very Not enough	Thrown Away
30.1%- 50%	Not enough	Fixed
50.1%- 80%	Good	Used
80.1%- 100%	Very Good	Used

Based on the assessment in table 4, it shows that the volleyball overhead passing training model based on game categorized very Good so that model exercise passing on ball volleyball game-based that has been designed in such a way that it is considered suitable for use.

## Discussion

Based on the research findings that have been carried out by researchers, the volleyball overhead passing training model based on games can be used and carried out for extracurricular students in Senior High Schools and Vocational High Schools. This training model is a good way to prevent students from getting bored and improve the performance of extracurricular volleyball students. In line with this overhead passing training model, it has a positive impact by attracting students' interest and accelerating their understanding of the material presented by the trainer ([Trisnawati et al., 2024](#)). The model created aims to eliminate student boredom during learning ([Wisudarsih et al., 2024](#)).

First stage analysis conducted on extracurricular activities at State High School 1 Plakat Tinggi, State High School 2 Plakat Tinggi, and State Vocational High School 1 Plakat Tinggi showed that there were specific problems that related to overhead passing, he result same like ([Destriana et al., 2022](#)). Researchers collect some existing designs and submit them to get new concepts. Then create a design for a volleyball overhead passing training model based on the game with the third stage in process development model. Design previously updated and add Instruments used in the overhead passing training model. The stages that the researcher took in developing a volleyball training model based on a game were: 1) making a design by making 20 game-based overhead passing training models. 2) Determining the tools to be used, 3) Conducting a review or validation by involving expert lecturers and teachers, 4) Making improvements based on expert advice so that a comparison of the initial product and after revision can be seen. After the expert validation was completed and was fit for testing, the researcher conducted a small-scale trial with the developed training model given

instructions to students. In addition, researcher make recording video for show results study student ball volleyball to expert. From these two schools, the average score for large-scale trials was 91.58%. In implementation stage shows that the development of the passing training model on ball volleyball based on game have quality which very good and can be used ([Karisman, 2020](#)). Result of evaluation shows that the volleyball overhead passing training model based on game categorized very Good so that model exercise passing on ball volleyball game-based that has been designed in such a way that it is considered suitable for use

The volleyball overhead passing training model based on the game created can have a positive impact on the learning process with the aim of learning being achieved optimally ([Yusrindra et al., 2025](#)). This training model created by this researcher has a fun, interesting nature, and does not make students bored in the training or learning process ([Rifaldo et al., 2025](#)). This training model aims to learn volleyball so that it focuses on students' skills in the game of volleyball ([Muslimin et al., 2024](#)). Several previous studies that developed volleyball overhead passing training models such as [Karo & Sari \(2022\)](#) stated that there was an increase in the ability to master basic volleyball overhead passing techniques through game variations. This can be seen based on their activeness when following the learning process properly. Then, [Rohendi \(2020\)](#) this study aims to improve students' learning and abilities when increasing after being given game-based volleyball overhead passing learning.

Continued by [Lahinda et al \(2022\)](#) who developed this training model is very useful and improves overhead passing skills. However, this study focuses too much on the training model. After that, who developed a training model in producing learning products for volleyball overhead passing learning models for students, who connected a playing strategy with amusement alterations to progress fundamental volleyball abilities in extracurricular volleyball understudies. Based on past investigate, there has been no inquire about that has created a more differing volleyball overhead passing preparing show. Such as a game-based volleyball overhead passing preparing demonstrate to assist understudies propel and progress the execution of extracurricular students' volleyball overhead passing.

## CONCLUSION

Based on the results of data analysis and discussion, it can be concluded that the results of small-scale trials and large-scale trials show very good results so that the game-based volleyball overhead passing training model that has been developed can be implemented in extracurricular students at the high school level. This model has a novelty, namely a game-based game model that is varied and innovative so that it is very good for school age. Several

significant conclusions were drawn from the study on the overhead pass development model of exercise in volleyball-based games. First off, players' technical skills specifically, accuracy, control, and consistency when performing the overhead pass were greatly enhanced by the exercise model. Second, beginner and intermediate players were better able to comprehend and apply proper techniques thanks to the model's progressive and structured design. Thirdly, the engaging and game-oriented nature of the exercises increased motivation and participation among athletes, which positively impacted overall training effectiveness. Additionally, the research showed that coaches found the model practical and adaptable for different age groups and skill levels. This adaptability made the model a valuable tool for various training environments, including schools, clubs, and recreational volleyball programs.

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