

Development of a Reaction Light Tool for Smash Targets in Volleyball

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ABSTRACT

This type of research is development (research and development). In research on the development of volleyball smash tools. In this study the authors carried out 8 research steps due to the limitations of the researchers. This research is planned to be carried out in September 2022. The research location was carried out at the Nusantara Private High School extracurricular club. In this study, a small trial was given to 10 volleyball extracurricular athletes from Nusantara Private High School, and a large trial was conducted to 20 volleyball extracurricular athletes from Nusantara Private High School. Based on the description of the research results and discussion, the conclusions in this study were determined, namely the results of a large group tryout by 20 athlete respondents from SMA Nusantara Lubuk Pakam. Where the score obtained in the large group trial was 1270 with a percentage of 90.71. The results of the large group tryout by trainer respondents were 2 people from Lubuk Pakam Nusantara High School. Where the results in the large group trial were 104 with a category of 94.54%, meaning that the large group trial of product responses was very feasible. The result of the final revision of the volleyball expert by obtaining a score of 100 with a percentage of 90.91% means that the product development of this smash tool is very feasible. Then the media experts obtained a score of 62 with a percentage of 95.38% meaning that the product development of this smash tool is very feasible.

KEYWORDS

development; training aids; smash

INTRODUCTION

Volleyball diversion may be a diversion played by two groups, each group comprising of 6 individuals. Each player has uncommon aptitudes, namely as a hitter, feeder, and libero. The most objective in this amusement is to hit the ball towards the opponent's field in such a way that the adversary cannot return the ball. One of the foremost imperative procedures in volleyball is the crush. Crush is the act of hitting the ball down with full power, more often than not hopping up, into the opponent's field (Robinson, 1993:13). The crush strategy is the foremost troublesome procedure and has complex developments so that the crush strategy must be prepared appropriately and accurately.

The advance and improvement of the amusement of volleyball that's happening right presently is exceptionally great for it is trusted that numerous will contribute to the advancement, creation of new media discoveries within the form of superior shapes of preparing for long haul covering physical, specialized and tactical/strategy angles. as well as rationally. So that each issue that will be faced can be overcome by proceeding to move

forward ourselves, by creating, assessing and moving forward from all supporting segments and proceeding to seek for more compelling and effective strategies and procedures in arrange to deliver understudies with way better accomplishments and eventually get a group that has more accomplishments.

One of the foremost critical strategies in volleyball is the smash. Crush may be a procedure that encompasses a more prominent chance of getting focuses than other procedures. In expansion, the crush may be a strategy that's favored by competitors or spectators when observing volleyball matches. Crush is the act of hitting the ball down with full constrain, as a rule hopping up, into the opponent's half of the court. Crush may be a blow that's done difficult and sharp with the ball hitting the opponent's field.

From the over expression it can be concluded that crush expertise is a simple aptitude for volleyball players who get it it and exceptionally troublesome for players who do not get it volleyball diversion, subsequently in the event that the players ace crush aptitude it implies they can run the coordinate well, by acing the ability our smashes are very easy to attack opponents well and trick them so we can produce better numbers as well. Technical development is directed at improving movement skills, designed so that the ball being played can be passed through the net into the opponent's field so that the opponent is unable to return the ball or has difficulty returning the ball properly, without ignoring the rules of the game (Edwan, 2017: 65).

Based on observations at Lubuk Pakam Nusantara High School. Smash tools in volleyball itself are still difficult to find in the Deli Serdang area, because coaches are used to using a manual system, namely by giving the balls one by one it will be very troublesome and it will be difficult to evaluate the movements of the athletes. It will be less effective in ongoing training and a waste of time if many athletes are trained without any trainer aids.

Then supported by the results of observations with an analysis of the needs of athletes where at least athletes answered question point 2, so it can be concluded that they have never used assistive devices in training. Then question point 3 that the most answers require variation in practice. Then most answer to question number 5 that the exercise is very effective if it is done with interesting tools. From this it can be concluded that training aids are needed in volleyball practice.

Then interviews with the coach also said, where the coach from Nusantara Lubuk Pakam High School said they had never used training aids for volleyball extracurricular training, especially smash techniques, due to limited funds from the extracurricular organizers. Then the interest of students participating in volleyball extracurricular activities is also small so that it is not made a priority for the Foundation. Then the limitations as a trainer also cause manual training. Where we trainers are not equipped with training.

The use of sports achievement tools, of course, tools from scientific and technological discoveries have developed a lot, as in football is the goal line which helps the referee in events that may not be visible to the eye but the tool as a goal line has been able to help determine whether a goal is created or not . In the fencing branch, for example, because of the help of science and technology in body protectors, the jury has been able to determine the points earned. In the same way that we find in athletics, namely photo finishes, this tool really helps the judges determine the best in an athletic competition in running numbers. These tools are only a small part of the many sports equipment that already uses technology.

The physical development of children in extracurricular activities is fostered by physical activity and experiences in their life according to the age of the child. Physical development, followed by the development of organ functions, increased movement skills

and thinking abilities as well as mental independence, is the development of children towards physical and spiritual maturity. To support psychomotor, cognitive and affective development, it is necessary to have positive activities (Ali, 2017: 143).

The specification for this reaction lamp focuses on the smash target aimed by the coach. The goal is for athletes to maximize the use of smash balls to generate points by seeing where the right targets are to generate points and are safe from blocking opponents. Athletes will be more trained if repetition is carried out using this tool.

Based on this problem, the researchers put forward the idea of developing through research entitled: Development of a Reaction Light Tool for Smash Targets in Volleyball.

RESEARCH METHODS

This type of research is development (research and development). In research on the development of volleyball smash tools. According to Gall (1983: 776) proposed a series of steps that must be taken in this approach including 10 general steps, in this study the authors carried out 8 research steps due to the limitations of the researcher.

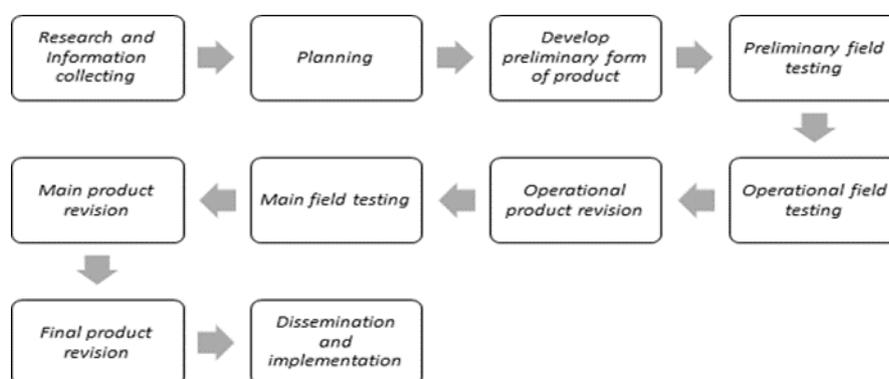


Figure 1. Gall Development Procedure (1983) Research

Description of Research Results

This investigate is inquire about and advancement (inquire about and advancement). In a think about, the chosen populace encompasses a near relationship with the problem under think about. The populace or universe is the entire number of units of examination whose characteristics will be evaluated. The population in this study was the extracurricular club of the Nusantara Private High School Deli Serdang. In this study, a small trial was given to 10 volleyball extracurricular athletes from Nusantara Private High School, and a large trial was conducted to 20 volleyball extracurricular athletes from Nusantara Private High School. In this research, what was developed was the development of a volleyball smash tool. This research was carried out in 8 stages of development, each stage described in the research results.

RESULTS AND DISCUSSION

1. Research and information collecting

Writing ponder related to the issues examined, and arrangement for defining a investigate system. In this ponder investigate and data collecting was carried out, the findings of research and information collection are:

- a. Researchers made observations at research schools to review the problems that occurred in smash practice. Based on observations at Lubuk Pakam Nusantara High School. Smash tools in volleyball itself are still difficult to find in the Deli

Serdang area, because coaches are used to using a manual system, namely by giving the balls one by one it will be very troublesome and it will be difficult to evaluate the movements of the athletes. It will be less effective in ongoing training and a waste of time if many athletes are trained without any trainer aids. Then the interview with the coach also said, where the Nusantara High School Lubuk Pakam coach said they had never used training aids for volleyball extracurricular exercises, especially smash techniques, due to limited funds from the extracurricular organizers. Then the interest of athletes participating in volleyball extracurricular activities is also small so that it is not made a priority for the Foundation. Then the limitations as a trainer also cause manual training. Where we trainers are not equipped with training.

- b. Researchers collected a number of relevant studies related to the development of smash training aids or relevant similar research.

2. Planning:

Define aptitudes and skill related to the issue, decide the goals to be accomplished at each arrange, and in the event that possible/necessary carry out a restricted possibility ponder. At the arranging organize, what the researcher did was to design a volleyball smash tool. The following are the specifications of the smash target tool that the researcher developed:

- a) Each square of the field has a score. 1,2,3, and 4 for each square. Where the box at the end contains a score of 3.4, and the box near the net contains a score of 1.2.
- b) The lights used are red and green.
- c) The cable used is a black cable for contrast when used indoors.

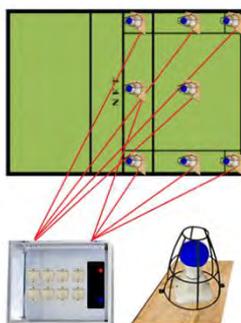


Figure 2. Tool Design

3. Develop preliminary form of product

Develop initial forms of products to be produced, prepare supporting components, prepare guidelines and manuals, and evaluate the feasibility of supporting tools. this step includes:

- a) Researchers have prepared a reaction light tool for smash targets.
- b) The tool can already be used.
- c) Researchers have tried the specifications of the tool first.



Figure 3. Smash Tool Development Forms

4. Preliminary field testing

Conduct product trials without samples and then take them to experts. The expert will test the feasibility of the volleyball smash tool product, whether it has been tested or not. Researchers bring tools to be shown and tested on experts. Researchers bring instruments to be validated by experts.

5. Operational Field Testing,

Conduct starting field trials on a constrained scale. including as numerous as 10 competitor subjects and 2 coach subjects. At this step information collection and investigation can be done by implies of interviews, perception or surveys. This step could be a constrained item test which incorporates: a) The researcher tested the product on 10 athletes and 2 trainers. b) After being tested, a product response questionnaire was distributed to athletes. c) The researcher looks at how well the athletes respond to the product. The results of the table above are the athlete's response to the smash tool product which was tested on 10 athletes from SMA Nusantara Lubuk Pakam. Where the results obtained score is 548 with a percentage of 78.29%. This means that the volleyball smash tool product developed is in the proper category

The results of the research above showed that the results of the score of the trainer's response to the smash tool product were tested on 2 trainers at SMA Nusantara Lubuk Pakam. Where the results obtained score is 87 with a percentage of 79.09. This means that the volleyball smash tool product developed is in the proper category.

6. Operational product revision

Make improvements/improvements to the more extensive trial comes about, so that the item being created is as of now an operational media plan that's prepared to be approved. B) Researchers revise the smash target training aids. c) Researchers revise the smash target training aids.

The results of the revision of the small group trial experts obtained that the volleyball expert by Rinaldi Aditya, S.Pd, M.Pd obtained a score of 95 with a percentage of 86.36%, meaning that the development of this smash tool product is very feasible. Then the media expert by Muhammad Saleh, S.Pd, M.Pd obtained a score of 55 with a percentage of 84.62%, meaning that the product development of this smash tool is very feasible. Expert revision of small group trials with very feasible categories.

7. Main field testing

The most trial including competitors as numerous as 20 subjects. (1) conducting introductory field tests on the item plan, (2) being constrained in nature, both the substance of the plan and the parties included, and (3) the introductory field tests being carried out over and over in arrange to get a doable plan, both in substance and

technique. The following steps were taken by the researcher: a) The researcher tested the product on 20 athletes. b) After being tested, a product response questionnaire was distributed to athletes. c) The researcher looks at how well the athletes respond to the product

The results of the large group trial by athlete respondents were 20 athletes from Nusantara Lubuk Pakam High School. Where the score obtained in the large group trial was 1270 with a percentage of 90.71. This means that large group trials of product responses are highly feasible. The results of the large group tryout by trainer respondents were 2 people from Lubuk Pakam Nusantara High School. Where the results in the large group trial were 104 with a category of 94.54%, meaning that the large group trial of product responses was very feasible.

8. Main Product Revision

This step will further refine the product being developed which includes (1) re-adaptability of the smash tool vision. (2) revising and adapting the smash tool in the form of a module (guidebook) equipped with a video involving potential product users, and (3) the results of the field test obtained a media design that was ready to be implemented, both in terms of substance and methodology. The following are the research steps: a) The researcher brings the results of the large group trial study to the experts. b) The expert revises the smash target tool. c) Researchers improve the smash target tool and make the final product.

The results of the revision of the expert in the large group trial showed that the volleyball expert Rinaldi Aditya, S.Pd, M.Pd obtained a score of 100 with a percentage of 90.91%, meaning that the product development of this smash tool is very feasible. Then the media expert by Muhammad Saleh, S.Pd, M.Pd obtained a score of 62 with a percentage of 95.38%, meaning that the product development of this smash tool is very feasible.

The advance and improvement of the amusement of volleyball that's happening right presently is exceptionally great for it is trusted that numerous will contribute to the improvement, creation of new media discoveries within the form of better shapes of preparing for the longer term covering physical, specialized and tactical/strategy perspectives. as well as rationally. So that each issue that will be faced can be overcome by proceeding to make strides

itself, by creating, assessing and moving forward from all supporting divisions and proceeding to hunt for strategies and methods that are more viable and effective in arrange to deliver understudies with way better accomplishments and eventually get a group that has more accomplishments.

One of the foremost vital strategies in volleyball is the smash. Crush could be a procedure that contains a more prominent chance of getting focuses than other procedures. In expansion, the crush could be a method that's favored by competitors or onlookers when observing volleyball matches. Crush is the act of hitting the ball down with full constrain, ordinarily bouncing up, into the opponent's half of the field.

The next relevant research is research by Agus (2019). This study aims to determine the feasibility test for developing a prototype model of one of the reaction exercises for increasing speed in the upper throw in softball. The research method uses the Research And Development (R&D) research method according to Borg and Gall with steps; potentials and problems, data collection, product design design, design validation and revision and the next step is to test the product to small groups and large groups. Small group research trials were carried out at softball sports clubs with as many as 15 people.

While the results of the large group trials were carried out to 30 Softball athletes in the city of Tasikmalaya.

The next relevant research is Giartama's research (2020) Science must quickly adapt to the demands of the times. Various sports have used technological advances to support activities both in learning and during training, especially in volleyball.

CONCLUSION

Based on the description of the research results and discussion, the conclusions in this study were determined, namely the results of a large group tryout by 20 athlete respondents from SMA Nusantara Lubuk Pakam. Where the score obtained in the large group trial was 1270 with a percentage of 90.71. The results of the large group tryout by trainer respondents were 2 people from Lubuk Pakam Nusantara High School. Where the results in the large group trial were 104 with a category of 94.54%, meaning that the large group trial of product responses was very feasible. The result of the final revision of the volleyball expert by obtaining a score of 100 with a percentage of 90.91% means that the product development of this smash tool is very feasible. Then the media experts obtained a score of 62 with a percentage of 95.38% meaning that the product development of this smash tool is very feasible.

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