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DEVELOPMENT OF DISC THROWING EXERCISE MODEL FOR BEGINNERS

Ucok Hasian Refiater[1] , Arief Ibnu Haryanto[2]

[1,2] Program Studi Pendidikan Kepelatihan Olahraga, Fakultas Olahraga dan Kesehatan, Universitas Negeri Gorontalo, Indonesia.

e-mail : ucok_sport@yahoo.co.id

Abstract

This research aims to develop a discus throwing exercise model for beginners. This study has a population of 10 beginner discus throwers at the Gorontalo State University. The novelty in this research is research related to the development of the disc flash exercise model for beginners. The method used in this research is development research adopted by the ADDIE model development research design. The place for conducting this research is the field of Campus 3, State University of Gorontalo. Data were collected by observation, interviews, and questionnaires. The stages of data collection are carried out in the early stages, which consist of five stages starting Analysis, Design, Development, Implementation, and Evaluating. The results of the study prove that from the results of the evaluation of athletic experts, it was obtained that this product as a whole met the eligibility criteria so that it could be used in the next stage of research. The conclusion is seen and proven that the development of this discus throwing exercise model is effective in increasing the throwing results.

Keywords: developme; disc throwing; exercise model.

INTRODUCTION

As sports science develops, the field of sport has turned very technical, challenging scientists and coaches to apply and practically apply their knowledge with the constant development of new technologies (1,2). The field of sports is affected by the development of sports science, one of which is athletics which is a basic sport in human civilization (3).

Athletics is a sport that consists of walking, running, jumping, and throwing numbers (4). Race walk numbers consist of

fast roads in which there are various distances and predetermined rules (5,6). The running numbers consist of various types of numbers that are contested, namely short, medium, long-distance, and marathon running, only the distance and the rules are determined, there is also a relay race and ringing hurdles which are also often competed (7–9). Jump numbers consist of long jump, high jump, and pole vault (10,11). While throwing numbers, namely javelin throwing, discus throwing, hammer throwing, and also discuss throwing (12,13).

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Especially for throwing numbers, each number in this throwing has its uniqueness in its training. This can be shown by the characteristics of the throwing equipment used to reach the furthest distance without violating the existing rules, but there is one thing that athletes need to have in this throwing number, namely upper muscle power, especially the arms (14–16). This power must be trained over a long period. This is because, in training power, the coach must be able to ensure that the strength and speed of the athlete are formed first, then they can train the arm muscle power on an ongoing basis (17). Even in discus throwing, the trainer not only adds a portion of arm muscle power training during the special preparation stage but also adds leg muscle balance to the training menu so as not to fall when rotating using one hand and alternate legs (18).

The uniqueness of this discus throwing number is not fully owned by other throwing numbers, for example, discus throwing and hammer throwing which both use rotation in the swing stage because in practice, throwing this discus when playing uses one hand only focuses to produce a throw in a

circle against the instrument (disc), while the other hand focuses on providing balance. Discus throwing is an individual's ability to perform disc throwing movements to reach the maximum distance with the following technical movement stages; swing, spin, disc removal, and recover (19). Efforts to produce optimal performance in Discus Throwing must be supported by several components, including qualified coaches, talented athletes, the right training program, good physical condition, excellent mental health, and appropriate training methods (20). The Discus Throwing Technique is not enough just to be trained from the entire movement directly but gradually which must be trained to provide maximum results in maximum throwing.

The position of the coach at the time of training must understand the needs of the athlete, optimal training will have an impact that is following the expectations of the coach and also the athlete, which is an achievement. Observations of researchers during athletic training on the number of Discus Throwing for beginner athletes, researchers found several things that needed to be improved in several stages of Discus

Throwing. The technique of holding the disc within the scope of the fingers on the disc still often uses a narrow grip, so it is not steady in holding the disc. There are still many spinning techniques before throwing that are too wide or narrow so that the direction of the throw becomes out of control. Techniques at the time of throwing the disc, there are still some mistakes in the direction of rotation of the disc and the impact of the throw. Finally, the position in the post-throw movement is less stable so some beginner athletes experience a loss of balance (21).

This research is considered very important, this refers to the observations of researchers who found that the training provided was less than optimal because it used less effective training methods. The method used by this trainer is a drilling method that is carried out repeatedly so that it makes the exercise tend to be endurance training, not the technical, power, and balance exercises needed by novice athletes.

RESEARCH METHODS

This research was conducted using ADDIE Analysis, Design, Development, Implementation, and Evaluating model

development research techniques. The consideration in using ADDIE is to become a guideline in building training program tools and infrastructure that is effective, dynamic, and supports the training work itself. This model was chosen because the ADDIE model is often used to describe a systematic approach to instructional development.

This study focuses on easy to difficult movements from simple to complex according to the existing pre-competition stages and must be carried out in stages by the athletes concerned. The relevance of this research needs analysis is the effectiveness of providing sequential training models that will be applied in this model.

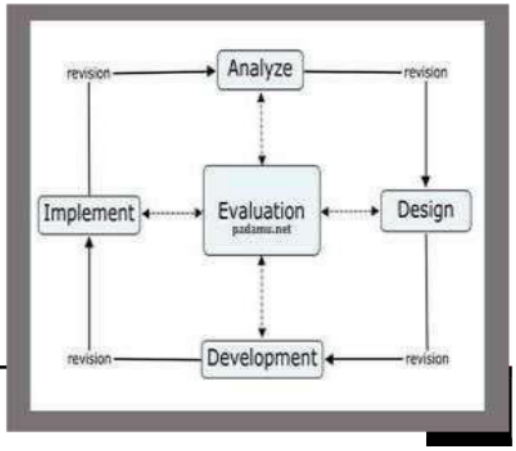

Figure 1. ADDIE Model

This research requires the assessment of experts in the field of discus throwing to measure the quality of the products that have been developed. The validation process in this study used two experts, namely physical training experts, and also athletic experts. The data obtained is in the form of qualitative data which is used to determine the quality of the development of instruments in the form of questionnaires, interviews, and observations.

The result of the throw is measured with the UDM (Ucok Distance Measurement) tool. The UDM tool is an electronic distance measurement device using a laser that produces accurate measurements and is connected to an

android to measure the ability to throw discs as far as distances (22). At the time of execution, the athlete is given three opportunities to throw and the valid result is recorded and then the farthest result is taken.

RESULTS AND DISCUSSION

This research is a breakthrough for the discus throwing exercise model. This type of research is Research and Development (R&D). This study used 10 beginner athletes for the discus throwing number. The results use the model (ADDIE) Analysis, Design, Development, Implementation, and Evaluating.

The analysis of this research was carried out first to find out what was needed by athletes, related to the training model that needed to be developed based on the dominant physical condition in discus throwing. After the researchers conducted the analysis, several things needed to be improved in the training model. The first is in the use of appropriate exercises for the hands, back, and feet following the stages of physical training for Pre-Competition.

The design is made based on the design model that will be developed according to the results of the analysis

carried out previously, in this case, the discus throwing exercise model which has the aim of determining decisions and detailed specifications of the product model item components in the form of an exercise model following the analysis that is still contained in the athletic training reference...

Development, in this stage details the development of the training model carried out as in the model design stage. At this stage, the researcher developed the exercise model into 8 exercise items which contained the objectives, tools/media used, implementation instructions, and pictures. This stage is equipped with three systematics, including product development, expert validation, and product revision.

Implementation is a real step to implementing the training model development system that was created. So at this stage the researcher implements and implements a product design for developing a discus throwing exercise model that has been arranged based on the first to the third phase based on the results of validation and expert testing on discus throwing athletes totaling 10 people. In general, the implementation uses the following stages:

product testing, model effectiveness testing, and interviews (23).

Evaluating is a process to see whether the model being built is successful, following initial expectations or not, and whether it is effectively used for discus throwing athletes. The evaluation stage can be carried out at these four stages, but the evaluation occurs at each stage. The discus throwing exercise model was developed to be used in the training process of discus throwing athletes. The discus throwing practice model is used to improve discus throwing skills that are carried out during practice and discus throwing competitions. This evaluation stage is described in two stages consisting of formative and summative.

This study resulted in 5 models of exercise that have been tested.

Table 1. Research results

No	Item Practice	Test Results
1.	The Plane Back Glide Discus Throwing Exercise Model	Well Executed
2.	The Stick Back Sliding Disc Exercise	Well Executed
3.	Model The Discus Throwing Exercise Model	Well Executed
4.	The Power Position Rubber Disc Throw Practice Model	Well Executed
5.	Discus Throwing Exercise Models Twisting and Blocking	Well Executed

The results of the existing trials led to the results of 5 items being carried out well, meaning that they were following what the researchers expected from both the training objectives and the exercise implemented in the field, and can improve discus throwing training results. The athletic sport of discus throwing cannot develop independently, so it requires the synergy of all aspects, to ensure an increase in performance. Where the exercise must refer to all the supporting aspects in it, namely the physical, technical, and mental aspects of the athlete. So that the resulting performance will be maximized.

Based on the results of the analysis, design, development, implementation, and evaluation, the effectiveness test of the discus throwing exercise model has met the valid and effective criteria. The effectiveness of the product is shown from management. The discus throwing exercise model is expected to be able to be practiced so that it will be effectively used for discus throwing skills training. This implies that the discus throwing exercise model is a

model that is designed and developed based on a strong theoretical foundation, can be practically

the results of the post-test conducted on the athletes. Seeing the advantages and disadvantages of the discus throwing exercise model are as follows: In essence, almost every training model can be applied, however, athletes need to adjust to the place and training infrastructure, and understand the space for movement, so that athletes are expected to be able to master the conditions in the discus throwing field. This discus throwing exercise model is an innovation to improve the athlete's ability in discus

throwing techniques. Its use must be appropriate and systematic, in didactic and methodical training and coaching sports achievements must start from an early age to achieve maximum performance.

The development of the discus throwing exercise model has quite a variety of exercises that can be used for athletes, while the development of an exercise model that uses these tools can help athletes in the training process to improve their technical abilities to reach the peak of the targeted achievement. The result of a good throw in discus throwing is a push or throw of an object (disc) with one hand starting from the end of the hand grip. The thrower holds the disc in the tip of the strongest hand in throwing with the elbow always raised. The thrower starts his throw from a squat position so the disc will move upwards with his head held high for additional thrust upon release. Also, move across hoops by jumping or by sliding. Some throwers can make rotational movements of their bodies to gain momentum and this is justified by law.

Further deepening the number of discus throwing several principles must be

remembered, the throwing distance obtained in discus throwing is very dependent on the speed of motion and the angle of the hand throwing the disc, to obtain maximum speed it takes the greatest force that can be mobilized, this power is used to reject the disc the farthest possible. Increasing the throwing distance requires body strength, the right shoulder and hip should be pulled back slightly. For maximum power, both horizontally and vertically, the front foot should remain in contact with the ground during the throwing motion. When throwing a disc, the energy expended begins with a forward rotation of the right hip followed by the athlete's torso and ends with a wrist movement when the disc is released. When this successive outpouring of energy is carried out, attention should always be paid to keeping the movement looking simultaneous and not stiff, and all phases of the movement being carried out vigorously and quickly or powerfully.

CONCLUSION AND RECCOMENDATION

Based on the development steps that have been carried out, the researchers adopted the ADDIE steps. This step consists

of analyzing needs, designing models and instruments to be made, developing a model according to the design with expert validation, applying the model developed by empirical testing, overall testing, testing its effectiveness, and evaluating the final validation of the implementation of the developed model by including the results. field observations.

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