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Foreword

The role of Educational Technology in teaching is of great importance because of the use of Information and communication technologies; therefore it needs continuous research to meet dynamics needs in rapid change environment recently. International research clinic and E&M Seminar in Educational Technology was a two days’ workshop and seminars schedule to meet those needs.

Proceedings have been prepared for papers of the keynote speaker, facilitators, and all presenters who have participated in this seminar. In accordance with the title of the seminar an outline of the paper in these proceedings can be grouped on seven topics, namely: Electronic & Mobile (E&M) Learning Design, Electronic & Mobile (E&M) Learning Development, Electronic & Mobile (E&M) Learning Implementation and Management, Electronic & Mobile (E&M) Learning Evaluation, Electronic & Mobile (E&M) Learning Program in Practice, and Trends, Issues in e-Learning Research for Education and Training, and Teaching and Learning Research in Education and Training. Papers were written by various agencies and groups such as lecturers, teachers, researchers, practitioners and observers with a lot of interest in education in Indonesia.

Finally, we realized that these proceedings are far from perfect. To that end, advice and input from all parties is expected to make improvements forward. Finally, we hope that these proceedings may give a significant contribution to improving the quality of education and dissemination of knowledge.

The Organizing Committee of IRCEMLSET
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THE LEARNING MODEL OF VOLLEYBALL UNDER SERVICE FOR JUNIOR HIGH SCHOOL AGE

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Abstract

The purpose of this research and development is to produce the learning model of volleyball under service for junior high school age. In addition, research and development is conducted to obtain in-depth information about the development and application of the learning model of volleyball under service for junior high school age and determine the effectiveness, efficiency and attractiveness of the model created child. This research uses development methods research & development (R & D) from Borg and Gall. Subjects in research and development are the students of junior high school consisting of 60 children.

The Instruments that used in this research and development is a questionnaire, as well as the instrument volleyball service test that used to collect the volleyball under service data for junior high school age. As for the stages in research and development are: (1) analysis of needs, (2) the expert evaluation (initial product evaluation); (3) limited trial (small group testing); and (4) the main trial (field testing). The effectiveness model test used under service test to know the level of volleyball under service ability for junior high school age before giving treatment such as under service model that developed and to determine the under service ability after treatment or under service treatment that developed, from the initial tests were conducted obtained the student under service level are 3956, then after being given treatment in the form of under service model. The student under service obtained the ability level are 5572. Accordingly this volleyball under service mode is effective to raise the learning model of volleyball under service for junior high school age.

Based on the results of the development can be concluded that: (1) whit the volleyball learning model under service for junior high school age can be developed and applied in physical education learning at schools (2) the volleyball learning model under service for junior high school age which have been developed, acquired evidence of this improvement is shown in the result testing data from pretest and posttest there is significant difference between before and after the development of a model.

Keywords: Development, Model, Under Service

INTRODUCTION

Background

Volleyball is a sport that is a compulsory subject in physical education subject which should be taught in school. Students involvement in volleyball learning program is expected to be able to help optimize students’ development and growth, improve students’ physical fitness components, such as: strength endurance, power, flexibility, agility, balance, and motoric coordination. In addition to developing the physical aspects, learning volleyball is also expected to develop the mental aspects, such as motivation to learn, confidence, courage and discipline, tolerance and cooperation which are the social aspects also expected to undergo a change for the better.

There are so many ways and methods of innovation that can be done to improve learning outcomes in the subject of physical education, both in terms of innovation of learning infrastructure, teaching methods, approaches in the learning...
process, and so forth. In the process of physical education learning, the teachers are expected to be able to provide a thorough knowledge and science. In the learning process of physical education, teachers should pay attention to the characteristic of age at each level of education because the learning design of physical education refers to the ability skill according to the phases of child development theory.

Weakness in physical education often occurs in developing models which is monotone that makes the students experience boredom in participating in physical education subject.

So it is expected that in using these models, the physical education teacher can synchronize with the condition and situation faced by the students. Making the right development model about the volleyball underhand serve subject in which the movements are divided into: first movement, performance movement, and advance movement. Related to the statements mentioned above, then it shows that the volleyball underhand serve model needs to be developed, which later can be used as a solution to help students learn about underhand serve more effectively.

Based on observations and interviews which were done by the author with the physical education teacher, facts as follows are found: The learning process of volleyball underhand serve in junior high school went well, but not all subjects instructed by the curriculum can be implemented, the method taught in teaching is still conventional, objective learning has not been reached with the indicator of students motion adequacy has not been met, and students’ motoric skill is not included in good category, facilities and infrastructure for learning volleyball is still lacking, volleyball learning program applied to the intracurricular activity still refers to volleyball training program which emphasizes achievement.

Efforts to solve the problems in learning volleyball underhand serve are as described above, therefore the research and development of volleyball underhand serve learning model for junior high school students are important.

THEORETICAL STUDY

Theoretical Description

Model

Model is defined as a conceptual framework that is used as a guideline in conducting activity. The model can be perceived as: (1) a type of design; (2) a description or analogy used to help visualization process of something that can not be directly observed; (3) a system of assumptions, data, and inferences used to mathematically describe an object or event; (4) a simplified design of a working system, a simplified translation of reality; (5) a description of a system that may be imaginary; and (6) minimized data presentation in order to explain and demonstrate the nature of its original form. Komarudin (2000:100).

Model interpreted as a conceptual framework which can not be used easily as a guide or reference in activity. The basic model is used to demonstrate generic model, which means general and fundamental used as the starting point of advanced model development in terms of a more complex and newer. Harjanto (2008:51). The conceptual model is a model that is analytical, mentioning the components of the product, analyzing the components in detail and showing the relationship between the components that will be developed. The theoretical model is a model that draws a
framework of thinking based on the theories that are relevant and supported by empirical data.

**Learning**

Suyono and Hariyanto state that “learning is an activity or a process to acquire knowledge, develop skill, improve behavior, attitude, and strengthen the personality.” Suyono and Hariyanto (2011: 9).

Hamid stated that very important learning characteristics are as follows:

“(1) learning conducted consciously and has a purpose. The objective is used as the direction of activity as well as the measure of learning success, (2) learning is an experience in itself, can not be delegated to others. Thus, learning is individual, (3) learning is a process of interaction between the individual and the environment. This means that the individual must be active when exposed to a certain environment. This effectiveness is realized because each individual has a variety of learning potential, (4) learning resulted in a change of those who learn. The change is integral, meaning that the change in cognitive, affective, and psychomotor aspect can not be separated from one another.” Hambani Hamid (2013: 16).

Physical education is an education done through physical activity as a “bridge” to reach the goal. To achieve the goal, it would require the innovation of learning model. The development of learning model is one form of approach system application in learning activity that in fact a study of a systematic process that results in a learning system which is ready to be used appropriately. Prior to innovation in education, a student must be equipped with modality to do the process of learning itself.

**Volleyball**

According to Ahmadi, “Volleyball is a complex game which is not easily played by everyone, because a volleyball game needs a very supportable motoric coordination to perform all the movements that exist in a volleyball game.” Nuril Ahmad (2007: 20).

Barbara L. Viera and Bonnie Jill Ferguson stated the advantages of volleyball game, among others:

(1) It is adaptable to various conditions that may present themselves, (2) It can be played with any number on a side from two, which is extremely popular in the beach game, to six. which is the number used for interscholastic, intercollegiate, junior, and club play, (3) It can be played and enjoyed by all ages and ability levels, (4) It can be played on many surfaces-grass, wood, sand, and various artificial surfaces, (5) It is an excellent co-ed activity, (6) It is an exciting spectator sport, (7) It can be played indoors or outdoors, (8) It is an extremely popular recreational activity with numerous leagues in business, community, and school intramural programs, (9) It requires few basic rules and skills, and (10) It has limited equipment needs. Barbara L. Viera & Bonnie Jill Ferguson (2010: 49).

Robert B. Gardner stated that “Volleyball is a game played by two teams consisting of six players on a rectangular court separated into two areas by a net with an inflated ball”. Robert B. Gardner (2014: 14).

**Volleyball Serve**
Beutelstahl explained “technique is a procedure that has been developed based on the practice and aims for the settlement of a certain movement problem in a way that the most economical and useful.” Dieter Beutelstahl (2008: 8).

One of the basic techniques in volleyball game is serve. Yusuf Hidayat, Sindu Cindar Bumi and Rizal Alamsyah said that “a serve in volleyball game is a starting blow to put the ball into opponent area. Besides, a serve is a blow to begin. Yusuf Hidayat (2010: 2).

Whereas according to Suhadi and Sujarwo, “The serve is the act of putting the ball into play. It is conducted by backfield player, conducted behind the service line by hitting the ball with one hand in such a way that the ball can fly across the net to the opponent area.” Suhadi and Sujarwo (2011:29). Serve according to Clemens is “The serve is not just a method to initiate play in volleyball. Consider it the first offensive weapon of the game”. Teri Clemens and Jenny McDowell (2012: 9).

Physical Education

Husdarta states “physical education and health education are essentially educational process that utilizes physical activity and health to produce a holistic change in the quality of the individual, both in the physical, mental, and emotional. H. J. S Husdarta (2011: 3).

A teacher should be able to design how the learning process can be implemented and achieve educational goals. Physical education is a process of learning through physical activities designed to enhance physical fitness, develop motoric skill, knowledge and behavior of healthy and active life, sportsmanship, and emotional intelligence.

Motoric Skill

According Widiastuti, motoric skill is as a capacity of a person related to the implementation of the physical ability to be able to carry out a movement, or can be defined that the motoric skill is the capacity appearance of someone to perform a motion. Widiastuti (2011: 165).

Schmit gives a clearer picture about the study of motion or commonly called the motor learning by stating that the motion learning is a series of processes that are associated with training or experience that lead to changes which is relatively permanent in one’s ability to show movement of skilled movements. Richard A. Schmidt (2000).

Model Fitt and Posner in Richard A. Magill explained that the learning stages of motion are divided into three different stages, they are: the cognitive stage, the association stage, and the autonomous stage, and this stage is determined by the behavior tendencies of students which are demonstrated at various points during learning process. Fitt and Posner (2011: 266).

Characteristic of junior high school students


Here are the results of research on the development of physical abilities in adolescence:
(1) Muscle power is the ability to exert strength and speed collectively achieves optimal level approximately 1 year after the achievement of maximum body size growth. (2) In adolescence, a good aerobic program implementation can improve cardio respiratory capability up to 20%. Husdarta and Nurlan Kusmaedi (2010: 71).

**Design Model**

The design of development product of underhand serve learning form in volleyball quoted from Borg and Gall has steps as follows:

![Design Model Diagram](image)

**Development Model R & D Picture**


**RESEARCH METHODOLOGY**

**Research Purposes**

Research and development of volleyball underhand serve model for junior high school students particularly have several objectives, among others:

1. To develop and implement volleyball underhand serve model for junior high school students.
2. To obtain empirical data on the effectiveness of development result of volleyball underhand serve for junior high school students.

The final purpose of this development research is to produce books on the under-part service in the volleyball sport for junior high school students and the books will then function as the supplement for the current learning assistant. The expected learning should be:

1) effective: the books are the supplementary tools in intensifying the junior high school students’ effectiveness and easiness to develop the skill of the volleyball under-part service.
2) attractive: The books are the attractive supplementary tools which could encourage the students to learn more.

**The Developed Characteristic Model**

1. **Target of Study**
Users becoming the target in the developed model study on the volleyball under-part service are:
  a. Junior high school students
  b. The 13-15-year-old Students (homogen subject) are assumed to facilitate the test of product.

2. Subject of Study
Random sampling is used to obtain the subjects of study. The subject criteria of the study are explained as follows:

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<td>Expert Evaluation</td>
<td>3</td>
<td>• 3 volleyball experts</td>
<td>- 35 models</td>
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<td></td>
<td>a. Small group try-out</td>
<td>10</td>
<td>• 10 junior high school students</td>
<td>33 models</td>
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<td>b. Field try group</td>
<td>60</td>
<td>• Limited-scale evaluation with 60 Jakarta junior high school students</td>
<td>33 models revised development</td>
</tr>
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<td>4</td>
<td>Effectiveness test of product</td>
<td>60</td>
<td>• 60 junior high school students</td>
<td>33 models</td>
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Study Method and Approach
The research development on volleyball under-part service used the Research and Development written by Borg and Gall with ten steps of study, all of which are: (1) Research and information collecting, (2) Planning, (3) Development of the preliminary from of product, (4) Preliminary field testing, (5) Main product revision, (6) Main field test, (7) Operational product revision, (8) Operational field testing, AND (9) Final product (10) Dissemination and implementation. Borg W. R & Gall, M (1983: 775).

Steps of Development Model
The final outcome of this study is the learning model of the volleyball under-part service for junior high school students, producing the complete learning method with its product specification. The effectiveness of the learning model could be examined to motivate students to study and the learning model could also be the teachers’ guide in providing the volleyball under-part service. Qualitative and quantitative approaches were used in this study and the development model was the Research and Development written by Borg and Gall with ten steps of study.
STUDY RESULT

Model development

The result of the development model on the volleyball under-part service for junior high school students were written in the form of manuscript which will be provided in the volleyball under-part service model.

1. Needs Analysis Result

There are two general purposes which will be revealed in the preliminary study or needs analysis. They are: (a) to what extent the learning development model on the volleyball under-part service for junior high school students is important, and (b) what obstacles and supports could occur in the learning development model on the volleyball under-part service for junior high school students.

The developed model of the volleyball under-part service was the result of the problem encountered by the writer. The writer observed and interviewed the junior high school sport teachers. The general purposes of the development model on the volleyball under-part service for junior high school students were obtained from observation and interview. In addition to general purposes, some characteristics of subjects for the volleyball under-part service could be developed.

2. Result of Needs Analysis Data

The result obtained from the data collected by interviewing and distributing questionnaires to sixty students were then processed and described. The formulation of study towards students was conducted in January 2016, making the needs analysis for junior high school students. The outcome of the needs analysis shows that (1) students feel excited with the learning of physical exercise, (2) students have yet to receive the learning models on the volleyball under-part service, (3) students are satisfied with the learning material on the volleyball under-part service, (4) students get bored with various learning on the volleyball under-part service, (5) students approve the would-be developed models on the volleyball under-part service for junior high school students.

Feasibility Model

After the collection of data and the making of a draft model on the volleyball under-part service, the examination of expert was committed to discover the model validity made with a direct valuation of the experts.

CONCLUSION

Based on data collection, field test and on result study discussion, it is concluded that: (1) the volleyball under-part service model could encourage the junior high school students to learn it effectively and efficiently, and (2) the developed model on the volleyball under-part service provides the junior high school students with full and proper understanding on the volleyball under-part service.

Implication

The learning model on the volleyball under-part service could provide goal of the positive contribution in achieving the goal of the learning. Besides improving the students’ ability in the volleyball under-part service, the learning model functions to motivate students to join the various learning. Based on this, the volleyball coaches may apply this learning model to improve the practice and learning.

Suggestion

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Following is the suggestions for the developed result of the study; they are the usefulness suggestion, dissemination suggestion, and the future development suggestion.

**Usefulness Suggestion**

Volleyball coaches, volleyball players, teachers and students may make use of this developed product model for junior high school students. Situation, condition, structure and pre-structure should be the considerable components.

**Dissemination Suggestion**

In order to make public this learning model, there are some suggestions to be considered. Make sure that this product is already in both good performance and content. In order that the volleyball under-part service for junior high school students is usable, make sure to make lots of copies so that the users will obtain good knowledge on it.

**Suggestion for Future Development**

Suggestions for future development are as follows: (a) The study subject should be conducted to a wider subject either at junior high schools or volleyball clubs, excluding those for a trial; and (b) The result of this model could be distributed to junior high schools and volleyball clubs.

**REFERENCES**


