

Effectiveness of Interactive Multimedia-Based Learning With Basic Skills Ability Towards Conventional Gymnastic

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Abstract— The purpose of this study was to obtain empirical data on the effectiveness and efficiency of the development of learning outcomes floor exercise techniques to students majoring in Physical Education and Health. This research is experimental pretest-posttest shaped Design Control Group. value gain score floor gymnastics skills control group gained an average of 0.38, which means a comparison between the pretest and posttest experience a difference in the medium category. Value gain score floor gymnastics skills pilot group was 0.81, which means a comparison between the pretest and posttest experience a difference in the high category.

Keywords— Learning, interactive multimedia, conventional Gymnastic exercises

I. INTRODUCTION

Technology is very important role for the educational process as well as help provide direction in the development of education [1]. In the history of the development of education, information technology is part of the medium used to convey the message of science to the crowd, ranging from printing technology a few centuries ago, like a printed book, to the telecommunications media such as voice recorded on tape, video, television, CD and learning through the internet and interactive multimedia. Multimedia is one of the means of science and technology that is effective and efficient in learning and mastering the science of sport [2], [3]. Multimedia is one of the media that can support the students to master the material, with the media is an educator can give a more detailed explanation to provide video footage, narration in the form of a description of the implementation and explanation in writing, so that students can see more clearly, in addition to the image and the sound produced will make students more interested in attention to the material, indirectly, the learning objectives will be achieved [4]. In accordance with the regulations Ministry of Education and Culture Number 49 2014 which states that lecturer are professional educators and scientists with the main task of transforming, developing and disseminating science,

technology through education, research, and community service.

Teaching materials are materials that carefully, systematically compiled by experts in the field of study certain or profession of educators to achieve the learning objectives. In general, education technology is marked by characteristics, among others: to disseminate the information widely uniform, and fast; can help supplement and (in some cases) can exchange task of the teacher; can be used to perform the learning activities which is directly or as a by product; community can support learning activities and invite community participation; can help influence the user to the materials and processes; help appeal to learn [5].

Specificity of teaching materials in the form of interactive multimedia can also be seen in the orientation that allows the student is able to develop the ability to learn optimally because: 1) Prepared according to the structure and sequence of content systematic, 2) explain the learning objectives to be achieved, 3) motivate student learning, 4) in anticipation of student learning difficulties, 5) provides a summary and feedback. With a variety of things that was raised, then the resource is one of the forms of learning resources, and has the goal of improving the effectiveness, efficiency and increasing the interest to learn and to continue learning.

From the experience of researchers for becoming teachers, students usually do not correct the movements of the floor exercise techniques. But with foresight and strategy owned by teachers to provide learning techniques are correct and learning model that starts from the most simple level, then the students will by itself have the capability of quickly mastering learning materials.

Also according to the students, so far they have never seen a display of learning gymnastics with media interactive multimedia and on average all states need to be created or developed learning gymnastics with media interactive multimedia, because of the presence of such development will be able to assist and facilitate students in accelerating mastery of technique or floor exercise movement, so they can immediately

take the examinations / assessments without requiring a long training period.

Learning Effectiveness says that the effectiveness of learning is one of the quality standards of education and is often measured by the achievement of goals, or it can also be interpreted as the precision in managing a situation, "doing the right things". According effective learning is a combination of structured covers human, material, facilities, equipment and procedures geared to change student behavior in a positive direction and better aligned with the potential and diversity of the students to achieve the learning objectives that have been set.

Effective learning is learning which provide the opportunity to learn by yourself or do activities as possible to the students to learn. Provide learning opportunities themselves and move broadest expected to assist students in understanding the concepts being learned. Also argues that the experience of social interaction is crucial for the development of thinking skills (thinking skills). Learning effectiveness is a measure of the success of a process of interaction between students and between students and teachers in educational situations to achieve the learning objectives [6].

The effectiveness of learning can be seen from the students during the learning activity, students 'response to students' learning and mastery of concepts. To achieve a concept of learning effective and efficient need the reciprocal relationship between students and teachers to achieve a goal together, but it also must be adapted to the school environment, facilities and infrastructure, as well as learning media is needed to help achieve all aspects of development students. Which is famous in the field of educational psychology, and in his book entitled "A Model of School Learning", stating that the Instructional Effectiveness depends on five factors: 1) Attitude; 2) Ability to Understand Instruction; 3) Perseverance; 4) Opportunity; 5) Quality of Instruction. Knowing some of the indicators show that a lesson can be effective if there is the attitude and willingness of the child to learn, preparedness for children and teachers in the learning activities, as well as the quality of the material presented. If all five indicators are not there then learning activities to teach children not going to go well. Effective learning activities are needed children to help develop children's cognitive level of understanding without prejudice to age-appropriate child development.

Learning effectiveness is a measure of the success of the process of interaction in educational situations to achieve the learning objectives. Judging from the activity during learning, responsiveness and mastery of concepts If all five indicators are not there then learning activities to teach children not going to go well. Effective learning activities are needed children to help develop children's cognitive level of understanding without prejudice to age-appropriate child development. Learning effectiveness is a measure of the success of the process of interaction in educational situations to achieve the learning objectives. Judging from the activity during learning, responsiveness and mastery of concepts Learning effectiveness

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Snelbecker define the model as a theory or a representative embodiment of the process and the variables included in the theory. According to Robins "A models is an abstraction of reality, a simplified representation of some real world phenomenon". The Model is a plan, representations, or descriptions that describe an object, system, or concept, which is often the simplification or idealization. This may be as a physical model (mock-up, form prototype), The model imagery (Drawings, computer images), or formulation mathematical.

Another figure that Law and Kelton pointed out that the model is a representation of reality that is presented with a degree of structure and order [7]. Johansson suggests there are four types of models: (1) Cognitive Model, a conceptual model as a basis reasoning and perception, learning, inductive, decision making, planning and so on. (2) Normative Model, the model for the development of specific functions desired, ends and means a system or process. (3) Descriptive Model, is a model which describe a process or system both quantitatively and qualitatively, the model is often used for scientific and technological objectives. (4) Functional Model, which is a model that describes the functional relationship between variables, can be presented quantitatively and qualitatively.

The learning model according to Joyce is a picture of a learning environment, which also includes our behavior as teachers when the model is applied. The learning model is a plan or a pattern that is used as a guide in learning in the classroom. As revealed by Chauhan in Wahab that learning model is a planning instruction, describes the learning process pursued in order to achieve specific changes in the behavior of students.

Learning model is a whole series of approaches, strategies, methods, techniques and tactics of learning. Learning model is a conceptual framework that describes a systematic procedure in organizing learning experiences to achieve specific learning objectives, and serves as a guideline for the designers of learning and teachers plan learning activities [8].

Multimedia is the combination of various media such as text, images, graphics, sound, animation, video, interaction and so forth, that have been packaged into a single digital file, and is used as a messenger to the public. Similarly, Munir revealed that interactive multimedia is a multimedia display designed by the designer in order to zoom fulfill the function of informing the message and have interactivity to users (user) [9]

II. METHOD

The research was conducted at the Department of Physical Education, Faculty of Sport Science, State University of Malang. With a total population of 180 students in 2014. The sample used class of 45 students group trial (learning interactive multimedia-based floor exercises) and 45 controls (learning-based conventional floor exercises). This study emphasizes the extent to which the effectiveness of the use of interactive multimedia in the learning process in the floor exercises improve student results. Judging from his objectives, this research including experimental research or testing the

effectiveness of the research done by giving treatment (treatment) specific to the subject of research is concerned with the use of experimental design pretest-posttest control group design [10].

TABLE I. RESEARCH DESIGN IN TEST EFFECTIVENESS MODEL

Subject	Pre-Test	Treatment	Post-Test
R1	O1	P	O2
R2	O3	P	O4

Steps taken in this trial, among others: (1) Establish a research subject; (2) Carry out pre-test (O1) for the experimental group (R1); (3) Carry out pre-test (O3) for the control group (R2); (4) Provide treatment for the experimental group (R1) and the control group (R2); (5) Conducting posttest (O2) for the experimental group (R1); (6) Conducting posttest (O4) for the control group (R2); (7) for an average score of pre-test and post-test and compared between the two; (8) subtract the average difference between the two through methods Gain score, to determine the level of significance of the difference between the pre-test to post-test. Gain score is an excellent method for analyzing the results of pretest and posttest in the experimental and control classes, and show the level of effectiveness teaching.

TABLE II. TABLE INDEX CRITERIA GAIN SCORE

Gain Index	Information
Gain Index <0.30	Low
0.30 <Index Gain <0.70	Moderate
Gain Index > 0.70	High

III. RESULT & DISCUSSION

A. Pre Assessment Test Skills Floor Exercise Control Group

To determine the initial skills of students, researchers conducted a pretest group of students. Results of votes on the floor gymnastics skills pretest control group learning gymnastics obtain an average value of 58.72, which means pretty average.

It was evident from table I that F ratio of pretest in bent knee sit-ups was 0.510. It was not significant, so random distribution of samples at primary level was successful. Whereas F ratio of adjusted final mean is 19.93, it was significant at 0.05 level.

A least significant difference test (Post hoc LSD) was applied to find out that, among group A, B and C, which experimental group treatment, was being effective on bent knee sit-ups.

B. Post Test Skills Assessment Floor

While to know the progress of the results of the learning process floor exercises control group, researchers conducted a floor gymnastics skills students posttest control group ie without special treatment groups using interactive multimedia learning gymnastics. Results of votes on the floor gymnastics skills posttest control group learning gymnastics scored 74.44, which means a good average.

C. Comparison Values Skills pretest and

Pretest and posttest control group data of gymnastics skills, then researchers conducted analysis of differences in pretest and

posttest value using Gain score. Thus, the contribution will result in the process affects the value of the skills on the posttest. The results of the gain obtained score an average of 0.38, which means a comparison between the pretest and posttest experience a difference in the medium category. The learning process in the control group have contributed to the students' skills at a moderate level. Here is a bar chart pretest and posttest value.

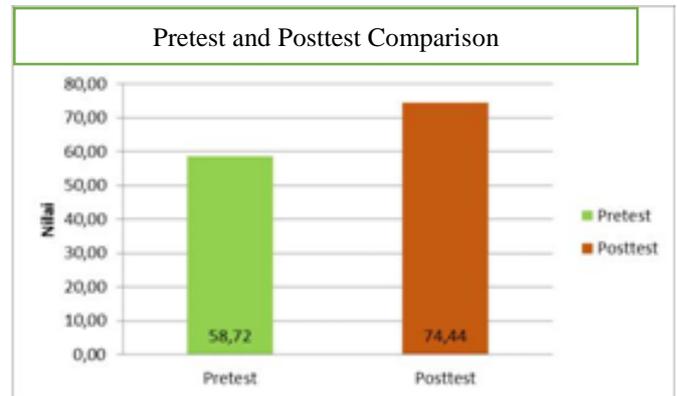


Fig. 1 Control group pretest and posttest results

From these results it can be concluded that the learning process is not maximized, because the variation of learning and learning media has not been used effectively. In connection with the functions of media, can be emphasized the following points: the media as aids to achieve more effective learning situation. As one of the components that are interconnected with other components in order to create a learning situation is expected. Speeding up the process of learning. Improving the quality of teaching and learning process. Concretize abstract so as to reduce the occurrence of verbal illness [11]

D. PreTest Skills Assessment Trials Group Gymnastics Exercise

Based on the analysis of data that the average value of floor gymnastics skills pretest trial group was 59.08, which means the floor gymnastics skills of students before getting treatment is pretty good.

E. Post Test Skills Assessment Trials Group Gymnastics Exercise

After performing the pretest, then the pilot group was given treatment based learning interactive multimedia floor exercises. Based on the analysis of data shows that the average value of floor gymnastics skills posttest pilot group was 92.20, which means the floor gymnastics skills of students after getting treatment was very good.

F. Comparison Values Skills pretest and posttest Trials Group Floor Exercise

To obtain data on the contribution rate of the treatment of student results, the researchers conducted an analysis gain score by finding the difference between the value category pretest and posttest student pilot group. The following analytical data gain score floor gymnastics skills pilot group of students was 0.81, which means a comparison between the pretest and posttest experience a difference in the high category. Treatment learning interactive multimedia-based floor exercises in the pilot group

have a higher contribution to the students' skills. Here is a bar chart pretest and posttest value of the pilot group.

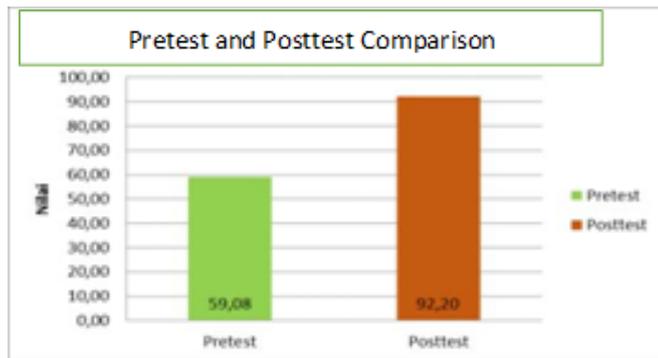


Fig.2 Experimental group pretest and posttest results

G. Discussion

This is caused by an interactive multimedia have a function, namely: First, the psychological functions: the function of attention, learning media can improve attention (attention) students to the learning material, function effectively, media learning can increase student enrollment to the stimulus, the function cognitive, through the media will be obtained a picture of the object at hand, good people, things, or events, imaginative function, the media can increase the imagination of the students were quite creative and fantasy, the function of motivation, the media, teachers can increase awareness and encourage students to become actively involved in learning [12]. Secondly, the socio-cultural background and different experiences to the students, while the curriculum and learning materials are determined, then learning media can be overcome because it has ability in providing the same stimuli. "In that sense it can be concluded that the instructional media is anything that is used as a communication or to convey messages, information / learning materials so as to stimulate attention, interests, thoughts and feelings of students in learning activities to achieve specific learning goals, in this case learning the basic skills of gymnastics for students of PE Class [13].

In addition to the interactive multimedia is easier for students to learn without face-to-face, students can learn wherever they are. So that mastery of gymnastics learning more effective and efficient [14]. As well as with multimedia: Students can be helped with the stages of learning are developed, so enthusiastic to follow the learning floor gymnastics and students quickly master the learning well, interactive multimedia that is developed is easy to learn and is very attractive to students, and interactive multimedia can be used as a reference or guide teachers in teaching, before the students practice immediately [15]. For that we need the use of interactive multimedia as a tool to deliver learning in the lecture.

IV. CONCLUSION

Based on data obtained from the results of field testing and discussion of the results of this study concluded that the interactive multimedia floor exercises, the students can learn and carry out the practice floor exercises effectively and efficiently, the interactive multimedia exercises this floor,

students can master the material theory and practice floor exercises quickly and correctly.

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