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Development of triple jump learning model based audiovisual for physical education students of Sebelas Maret University

Abstract

This research aims to make the product of triple jump learning model based on audio visual in learning athletics in Physical Education of Sebelas Maret University.The method used is Research and Development. Instrument used are interview, questionnare and test. The subject of this research includes the athletic instructor number triple jump and students in Physical Education of Sebelas Maret University. The technique of collecting data uses interview the instructor number triple jump, test and student respons for learning model product, evaluation also validation from the expert and documentation. Analysing data through collecting data, exploring data, reducing data, presenting data, and verifying data. The product of learning model of triple jump has been analysed the media expert with the results 90%, the expert of triple jump material gives score 90,42% and practician gives score 92,91%. The product fulfills the "Valid" criteria and can be used by the students in learning process. The little scale of the trial which was done by the 15 students got the result 88,27% The large scale of trials which was done by 25 students got the results 91,12%. P-Value is less than the standard number of signification 0,000 < 0,005%. The conclusion result of those control and experiment groups shows the significant result. The control group that has used the conventional method increases 74,4 centi meter with the percentation about 35%, while the treatment group that has used the last product of triple jump learning model increases significantly about 137,5 centi meter, almost double from control group that gets percentation about 65%. Based on the result which has been gotten, thererefore the product of triple jump learning model based on audio visual is effective to be implemented.

Keywords: Development, Triple Jump Learning, Physical Education

Introduction

According to Winendra (2008) triple jump is the modification of long jump. Triple jump is one of many branches in athletics sport, triple jump is almost the same as long jump, the difference is that long jump has the motion "hoop","step" and "jump". In fact, the students are not familiar with triple jump so that they are confused in

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learning and exercising because of less references. The students in Physical education have explained that they need the learning guidance that can be used as reference to individual learning, because they have not had the learning guidance that can be used when exercising by themselves in other times of teaching learning activity. The difficult material and also the time to learn together in the limited time of the college and the material delivery that is not documented make them difficult in remembering the motion based on the basic technique properly. The result of the observation in 2016 and 2017 shows the graduation level of students in athletic college,number triple jump is still low that is about 35-45%.

Learning process and understanding the technique of triple jump need to be noticed by the lecturer. The instant observation is not enough for the students to see and observe the errors in triple jump because the process in triple jump is very quick. The learning media like improper tool or infrastructure will obstract the active, infrastructure, and attractive learning process so complicates the studuents in pervading the learning, the students are also less understand the learning material. To achieve the goal of learning, be sides needs will in exercising the physic for supporting triple jump, needs another source of learning and other supported tools like media for creating the active, creative and effective learning to achieve the learning result which is expected.

Media is the communication form that can be printed or audiovisual with the tools (NEA in Agus S Suryobroto 2001:15). Researches show that the children and the young people nowadays spend more than 4-5 hours a day in front of media such as television, video, computer, internet, movie, radio, tape and video games (Taras, 1990; Bernard- Bonnin, 1991; Woodard and Gridina, 2000). Potential with solutive solution for solving the problem, how the material can be delivered but easy to learn and access it.

According to Tarik Yazar (2012) audiovisual media can change the perspective of children about the world and widen the imagination thinking of children. Audiovisual learning media is very important in learning system, this thing happens because audiovisual can improve or activate many senses in learning. With the quick improvement in information technology; compact disc system, dvd, and computer has had the important space in our life (Asutay,2007). The learning using audiovisual media is easy to understand because the material in media can be assimilated slowly and sequentially and also can be repeted again in the discussion which has been understood. The learnimg method of delivering material in limited time becomes one of the causes is the student less understand the technique of triple jump extensively. The improvement of using information technology like video,compact disc and computer give the easy way for the students in utilizing the media in learning.

Methods

The research method used is Research and Development. This research is done by the students of Physical Education of Sebelas Maret University in 2018. The

limited testing is done using the little group that consists of 15 students. The testing of large scale using big scale that consists of 25. The testing of effectivity using 40 students with the detail treatment group that consists of 20 students and control group consists of 20 students.

The last result that is expected in this research is a triple jump learning model which is good and right in the form of product like video compact disc (vcd) that will be used as reference in learning. The development procedure that is used in this research using research and development Borg and Gall method. This Borg and Gall model has some stages that is oriented to more detail and sistematic product development. According to Borg and Gall (2007) the researh procedure step; analysing the need, identifying through teory study, making and developing the first product, analysing experts evaluation, limited field testing then revision, diseminating and implementing the product of development result.

The instrument for colleting data using three sources which are questionnaire, validation and the test result. For measuring media validity that is made by the researcher using validation paper. One of validation expert triple jump and validator practician for scoring the media validation that is made. Then, the researcher uses the test to assess media effectivity. The researcher also uses questionnaire to assess the practicity of media that is made. Media is considered practice if it has indicator, where validator says that media of learning can be used in the little or without revision.

Evaluator in this research consists of three experts which are triple jump,media and practician. The use of assessment scale questionnaire in this research is using likert research scale , this scale is used to measure the behavior, opinion and perception of individual or certain community about a phenomena (Sugiyono,2015). After unfinished score is changed into percentase, then it is converted by using norm assessment that points to standar of reference assessment.

Table 1. Reference Assessment Standard

NNo	Range of Scores Values	Information	Conclusion
1	80% - 100%	Valid	Used
2	60% - 79%	Enough Valid	Used
3	50% - 59%	Less Valid	Replaced
4	<50%	Invalid	Replaced

Results and Discussion

Audiovisual implementation like video compact disc which contains the triple jump learning model is the development research using Borg and Gall audiovisual model. The research procedures according to Borg and Gall are; analysing need, identifying through the theory,making and developing the first prodyct, evaluting the expert, testing the little scale, revision, testing wide scale, revision, testinng the effectivity of product, final product revision.

a. Requirements Analysis

Analysing need includes analysing problem process, arranging power source and planning the solution to the result that want to be achieved. First step the researcher makes analysis then determines the main problem in he research. The method that is used by the researcher to get the material about happening problem using interview method with related people like instructor,triple jump expert and the students. Before doing interview, the researcher does observation to get finding from some findings. Based on the observation it can be determined the schedule of interview with the related people like instructor,triple jump expert and the students. Interview is doneafter learning has been done and visiting one by one of the people that want to be interviewed so that the researcher gets the complete information. The questions in interview is started with learning material, field situation, learning method and obstacles.

The interview result has conclusion that audiovisual learning model is very needed for the students who take the college or triple jump subject. Learning using audiovisual has been applicated but in the little portion, just in visual. Learning model using audio visual model is very important to be applicated to the students as reference and learning guidance by themselves in othe college time schedule, aid media teaches the more effective and solutive material in triple jump. The learning that is supported by audio visual learning media has not been applicated because of instructor business, it needs particular time and energy to make audio visual media product. The main obstacleis the limited time of learning to teach complex learning material, so understanding material is less maximal than the learning duration that is done and there has not been the guidance or reference of learning model in audiovisual as the material to lear individually or collectively. The researcher expects the product can help the instructor or trainer in teaching triple jump, and makes easy the students in learning triple jump well and properly.

b. Theoretical Study

The stage of product development includes supported theory about audiovisual implementation in triple jump learning model and stage of arranging the first product development concept. It needs theoretical study to support the preparation of making ang developing product in the model that is used in triple jump learning based on audio visual in Physical Education of Sebelas Maret Unversity. The theories used are knowledge theory about sport, triple jump, learning,audiovisual media and another supported aspects.

c. Making First Product

Make a first product design of the compact disc based triple jump learning model, then produce it. The steps in the triple jump learning model are arranged in stages starting from simple and easy movements then to more difficult and complex movements . Learning models that can be intended in the form of examples of a series of movements that are arranged in stages and used in learning

jumping Triple Jumps consist of twelve learning models, consisting of: 1) Short distance right foot movement , 2) Short distance left foot movement, 3) Movement of the right foot tilt with a longer distance, 4) Movement of the left foot tiptoe with a longer distance, 5) Soaring step (deer step) past the low obstacle, 6) Combination of bouncing (hoop) and stepping (step), 7) Triple jump from the side of the sandbox with a gradual distance, 8) Triple Jump on the actual track with a short distance, 9) Triple Jump on the actual track with a medium distance, 10) Triple Jump on the actual track with a long distance, 11) Practice start -up (run-up) with prefix inverted (check mark) , 12) Triple Jump without helped media with check mark.

d. Evaluation by The Experts

1) Evaluation by Media Expert

Media Expert in this development product research is Dyah Arum Ripdianti, S.Pd., M.Pd. Magister of Technology in Sebelas Maret University, the member of Southeast Asian Ministers of Education Organization (SEAMEO) especially in learning media division of education.

Table 2. Result of Evaluation of the Media Expert

No	Component of Scoring	Score Result	Score Maximum	Percentage	Category
1	Text	22	25	88 %	Valid
2	Picture/Photo	23	25	92 %	Valid
3	Audio Sound	9	10	90 %	Valid
4	Video	27	30	90 %	Valid
	Total	81	90	90 %	Valid

The evaluation result of media expert for product assessment component contains text aspects, picture, audio and video get 90,42%. Based on standar criteria, it can be concluded that triple jump learning model product based on audio visual like vcd is valid so that it can be used. It is because the result of data is about 80-100% for product classification in conversion from likert scale to standar reference assessment norm percentation.

2) Evaluation by Triple Jump Material Expert

Material Expert of this development product is Bagus Kuncoro, S.Pd., M.Or who is the lecturer in Tunas Pembangunan University in Surakarta and National Technical Official of Athletic.

Table 3. Result of Evaluation Triple Jump Expert

No	Component of Scoring	Score Results	Score Maximum	Percentage	Category
1	Aspect of Appropriateness	57	60	95%	Valid
2	Aspect of Significancy	52	60	87%	Valid
3	Aspect of Safety	55	60	92%	Valid
4	Aspect of Implementation	53	60	88%	Valid
	Total	217	240	90,42%	Valid

The evaluation result of media expert for product assessment component contains text aspects,picture,audio and video get 90,42%. Based on standar criteria, it can be concluded that triple jump learning model product based on audio visual like vcd is valid so that it can be used. It is because the result of data is about 80-100% for product classification in conversion from likert scale to standar reference assessment norm percentation.

3) Evaluation by Triple Jump Practician

The practician expert in this research is Aba Sandi Prayoga, S.Pd., M.Or who is the lecturer and leader in Study program STKIP Ngawi and National Technical Official of Athletic.

Table 4. Result of Evaluation Practice Triple Jump

No	Component of Scoring	Score Results	Score Maximum	Percentage	Category
1	Aspect of Appropriateness	58	60	96%	Valid
2	Aspect of Significancy	56	60	93%	Valid
3	Aspect of Safety	54	60	90%	Valid
4	Aspect of Implementation	55	60	92%	Valid
	Total	223	240	92,91%	Valid

The evaluation result of media expert for product assessment component contains text aspects, picture, audio and video get 90,42%. Based on standard criteria, it can be concluded that triple jump learning model product based on audio visual like vcd is valid so that it can be used. It is because the result of data is about 80-100% for product classification in conversion from likert scale to standar reference assessment norm percentation.

e. Little Scale Trial

The researcher used the research subject is physical education of Sebelas Maret University students for the 2018 class year for a small-scale trial with 15 students. The small group trial is held in the last week of July 2019 at Universias Eleven March . Implementation of the small group trial begins with the researchers

explain the material, observing the video of learning product, explain destination activities, then complete questionnaire field-testing a small group.

Table 5. Presentation of Quantitative Data of the Result Testing on Small Group

No	Aspect of Evaluation	(∑X) N=25	(∑Xi)	Percentage(%)
1	Aspect of Understandable	210	225	93,33 %
2	Aspect of Implementation	123	150	82,00 %
3	Aspect of Attractiveness	190	225	84,44 %
4	Aspect of Expediency	139	150	92,67 %
	Total	662	750	88,27 %

f. Revision

Table explains that the testing of little group in this research can said valid because of getting the result 88,27%. Revision in this stage is video duration which is used too short in each motion series. Oriented in criteria of standar reference assessment conversion to percentation that is used by the researcher, the conclusion in this stage is based on the theory and data is valid and can be continued in the next stage.

g. Large Scale Trial

Evaluation of the results of previous tests serves as a reference material for carrying out the next step . Large-scale trials using 25 student subjects were conducted in the early week of August 2019 at Sebelas Maret University. Test try field starts with researchers explain the material, observing the instructional video products, explain the purpose of activity then complete questionnaire field trials broad scale . The results obtained from large-scale field trials are 91.12%. So the results obtained are considered valid.

Table 6. Quantitative Data Presentation of Large Group Testing Result

No	Aspect of Evaluation	(∑X)N=25	(∑Xi)	Percentage(%)
1	Aspect of Understandable	354	375	94,40 %
2	Aspect of Implementation	217	250	86,80 %
3	Aspect of Attractiveness	327	375	87,20 %
4	Aspect of Expediency	241	250	96,40 %
	Total	1139	1250	91,12 %

h. Revision

The analysis result after large scale trial that triple jump learning model product is valid so that it can be continued to product effectivity testing step. This conclusion is got after analysing step that has been done by the researcher and evaluated by the experts and supported data that supports the validity of product design.

i. Effectivity Test

Product effectivity test stage that has been done by 40 students physical education in Sebelas Maret University with the goal to know the effectivity level of triple jump learning model which is created to be final product and utilized as reference of students learning about triple jump. The design of the experimental uses initial and final test with two groups randomize pretest and post-test. This final test was obtained after the implementation of triple jump learning model exercises in each group. Triple jump drills in each group is different than from groups other . The treatment group uses triple jump training exercises which contain learning model products developed by researchers with a sample of 20 students , while the control group uses conventional training with a sample of 20 students .

Table 7. Pre Test and Post Test Experiment and Control Group

Experimental Group				
No	Name	Gender	Pre Test	Post test
1	Sample 1	Female	791	883
2	Sample 2	Male	986	1039
3	Sample 3	Male	983	1018
4	Sample 4	Female	688	768
5	Sample 5	Male	1062	1123
6	Sample 6	Female	819	863
7	Sample 7	Male	989	1017
8	Sample 8	Male	872	1028
9	Sample 9	Female	726	804
10	Sample 10	Male	1092	1173
11	Sample 11	Male	993	1093
12	Sample 12	Male	1053	1124
13	Sample 13	Male	968	1012
14	Sample 14	Female	680	771
15	Sample 15	Male	898	965
16	Sample 16	Male	865	959
17	Sample 17	Male	974	1073
18	Sample 18	Male	1035	1096
19	Sample 19	Male	884	972
20	Sample 20	Female	728	793
Students N=20		**Mean**	**870,5**	**1008**

Control Group				
No	Name	Gender	Pre Test	Post test
1	Sample 1	Female	683	851
2	Sample 2	Male	987	1106
3	Sample 3	Male	894	1012
4	Sample 4	Male	1019	1156
5	Sample 5	Male	926	1097
6	Sample 6	Female	663	792
7	Sample 7	Male	994	1063
8	Sample 8	Male	721	839
9	Sample 9	Male	1102	1223
10	Sample 10	Female	745	917
11	Sample 11	Female	746	886
12	Sample 12	Female	681	793
13	Sample 13	Male	1037	1162
14	Sample 14	Male	1007	1149
15	Sample 15	Female	692	876
16	Sample 16	Female	757	869
17	Sample 17	Male	891	1012
18	Sample 18	Male	873	1059
19	Sample 19	Male	1117	1224
20	Sample 20	Male	875	1074
Students N=20		**Mean**	**904,3**	**978,7**

Based on the table above, it can be seen an increase in the control group if seen from the difference in the pre-test results of the control group with a mean of 904.3 centimeters and the post-test results of the experimental group with a mean of 978.7 centimeters. The increase obtained after using conventional methods is obtained an average of 74.4 centimeters. Where as in the treatment group there was a significant increase between the initial test results with a mean of 870.5 centimeters and the final test results of the experimental group with a mean of 1008 centimeters. The increase obtained after using the treatment using the triple jump learning model is an average of 137.5 centimeters.

The control group using the conventional method had an increase of 74.4 centimeters or 35%, while in the treatment group using the jump learning model an increase of 137.5 centimeters or almost double that of the control group that was getting a percentage of 65%.
From the data table and treatment group over the control group obtained experiment with using the t test (significance test):

Table 8. Test Results Data Table First and Final Tests

Group	Test Result		Difference Value	P-Value	Conclusion
	First	Final			
Treatment	870,5	1008	137,5	0,000	Significant
Kontrol	904,3	978,7	74,4	0,000	Significant

From the results of the above table, the P-Value result is smaller than the significance level of 0.005%, which is 0.000. The conclusion of the control and experimental group results is that the results are **significant** .
Two groups different test was done by testing the difference in the results of the pre-test and post-test scores of the control group and the experimental group . The statistical test used is the Independent T Test.

Table 9. Results Difference Between Group Values

Difference	N	P	Information
Control	20	0,00	P < 0,05 There are significant differences in influence
Experiment	20		

Based on the percentation comparison, significance and different score testing, can be known that there is the improvement of the result and shows that the triple jump learning model product based on audio visual video compact disc is prooved more effective to improve the distance of jump in treatment group if looked from the distance jump comparison with control group. The final result can be concluded that triple jump learning model based on vcd can improve the jump distance of the students in Body Health and Recreation Department Sebelas Maret University.

Conclusion

Based on the results which have been discussed before,therefore it can be concluded from Learning Model Based on Video Compact Disck in Triple jump Learning for students which are

1. The result of analysis by the media expert, material expert and pactician expert to the product gets 90% from media expert, 90,42% from the material expert, and 92,91% from practician expert, based on the validation result, the product has

been fulfilled the "Valid" criteria and can be used by the students in learning process

2. The trial result of little scale which has been done by 15 students gets the result about 88,27%,based on that result therefore it can be concluded that the first product is fulfilled the "Valid"criteria and can be continued in the next step with some evaluation
3. The trial result of large scale which has been done by 25 students gets the result about 91,12%,therefore based on that result it can be concluded that the product has been fulfilled the "Valid" criteria and can be used in the effectivity testing step.
4. Control group which uses conventional method increases 74,4 centi meter with the percentation 35%,while for the treatment group which uses the final product of triple jump learning model increases significantly 137,5 ceti meters, almost double of the control group that percentation is 65%.
5. P-Value is smaller than signification standar number 0,000<0,0005%. The result of those control and experiment groups shows the significant result. There are improvement in control group if looked by different pre test result, control group with mean 904,3 centi meters and post test result of experiment group with mean 978,7 centi meters. The improvement that is gotten after using conventional method is about 74,4 centi meters. While in treatment group there is significant improvement between first test result with mean 870,5 centi meters and final test result of experiment group with mean 1008 centi meters. The improvement after using the triple jump learning model gets average 137,5 centi meters.

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