

DEVELOPMENT OF LEARNING VIDEOS ON BASIC SOCCER GAME TECHNIQUES AT THE JUNIOR HIGH SCHOOL EDUCATION UNIT LEVEL

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Abstract

The development of educational civilization and technology is expected to make it easier teachers in order to create and produce learning media that can be used practically and efficiently. Sports and health Physical Education subjects are one of the subjects that can utilize technology in the learning process. This research aims to determine the validity, practicality and effectiveness of tutorial video learning media. This research is development research (R&D). This research produced a learning media product that can be used in Physical Education Subjects for Junior High School Football material. This study was validated by 3 experts and declared suitable for use, the results of the effectiveness test in the small group of this study showed a figure of 18,330 for T count greater than T table 1.761 while the effectiveness test result in a large group was 29.215 for T count greater than T table 1.691 which means the study is effective for improving the cognitive abilities of learners. Learning through this medium can be accessed online and offline. This research shows that tutorial video physical education learning media developed and tested for validity and effectiveness can be used in teaching and learning activities.

Keywords: Media; Tutorial Video; Football.

Introduction

Education is an effort to prepare reliable Human Resources (HR) useful for the development of the nation and state. Education is one of the most important factors for the sustainability of mankind. In addition to clothing and food, education can already be included in basic human needs (Gunawan et al., 2017). The progress or failure of a country can be seen from the progress of its education system, without education humans will be difficult to develop and even backward. Education must be truly directed at producing qualified human beings with noble ethics and good morals (Wahyudin, 2014).

How to cite:	Muhammad David, Hartati, Herri Yusfi, Iyakrus, Wahyu Indra Bayu (2022) Development of Learning Videos on Basic Soccer Game Techniques At The Junior High School Education Unit Level, (7) 10., Doi: 10.36418/syntax-literate.v7i10.13105
E-ISSN:	2548-1398
Published by:	Ridwan Institute

Education as a *leading sector* of human development has a significant contribution in responding to global competition in changing socioeconomic conditions of the world community. Education must keep up with the development and demands of human needs. Some experts argue, the development of the education system follows the development of the industrial revolution. Education is degraded and inversely proportional to the advancement of world technology regulations (Ardhani et al., 2021). We have entered the vortex of the industrial revolution 4.0 or entered the 21st century. According to Daryanto (2017), the characteristics of the century

21 is characterized by the use of information and communication technology in all aspects of life. This technology can connect the world beyond geographical barriers, so that it becomes borderless. Education in the world is also directed towards high-level technological breeds. Schools are the main person in charge of creating humans who are ready to face the digital era and have to go the extra mile (Buhari, 2017). *Extraordinary* education is a super powerful demand of education providers in preparing generation Z humans or known as gen-Z (Arkorful & Abaidoo, 2015; Ojokoh et al., 2013). 21st century learning is an education in order to prepare students to be able to apply advances in Information and Communication Technology (ICT) which is growing so very quickly has an influence on various aspects of life, including the teaching and learning process. (Jannah et al., 2019). One example of advances in Information and Communication Technology (ICT) has an influence on the learning process is that students are given opportunities and are required to be able to develop their skills in mastering technology, especially computers, so that students have the ability to use technology in the learning process aimed at achieving thinking skills in student learning (Gjelaj et al., 2020; Jaya et al., 2018).

The 21st century is now also called the age of knowledge, the objectives of education can include: (1) preparing humans in a world of ups and downs, dynamic and *unpredictable* (unpredictable); (2) creative behavior; (3) liberating unique individual intelligence and (4) producing innovators. One of the lesson contents that focus on achieving all domains of learning objectives, namely the cognitive, effective and psychomotor domains included in the 21st century learning area is the content of Physical Education, Sports and Health, hereinafter referred to as PJOK. Suherman(2018) revealed that PJOK is an educational process that utilizes physical activities, systematically planned aimed at developing and improving individuals organically, *neuromuscularly*, perceptually, cognitively, affectively, psychomotor, emotionally and within the framework of the national education system.

The advantages of soccer according to Kurniati (2016), namely (1) able to develop children's social skills obtained through the process of playing; (2) games allow active participation of students to learn; (3) have competitive values that are able to provide opportunities for students to learn to compete healthily to achieve the expected goals; (4) help develop, both *social skills*, *motor skills* and *emotional skills* in communication between players. Learning by playing makes a good experience for students, not only developing muscle skills, coordination of movements,

communication skills and learning to concentrate.

The scope of PJOK learning that almost meets all 21st century learning criteria standards, students are expected to have life *skills* as a provision to enter the next level. That is, the world of education must be able to predict and prepare what skills must be possessed by students to live in the future. At this point, education must be able to adapt to rapid developments in the field of information and communication technology by starting to build an education system (digital era learning) (Pertiwi et al., 2017).

PJOK learning is a complex educational process through physical activity focused on achieving all domains of learning objectives consisting of cognitive, affective and psychomotor domains and simultaneously developed in a quality learning design. (Yunitaningrum & Triansyah, 2016). On the other hand, problems in PJOK learning until now have never subsided and are multidemnent, let's say related to the teacher's ability to teach students who are still minimal, the availability of PJOK infrastructure is very limited and the discrepancy in the qualifications of PJOK teachers, such as there are still many PJOK teachers with non-undergraduate education qualifications and even in some schools, PJOK lessons are taught by teachers who are not qualified PJOK teachers (Dwi et al., 2020).

The use of learning media is one of the alternatives that can be used to overcome the limitations of teaching and learning activities of PJOK content. One of the media that can be used is digital-based learning media, considering that digitalization of life that is growing rapidly in the future must be implemented in the world of education, so that it can equip our children with important skills in dealing with them. According to Dale quoted by Arsyad (2010), that the acquisition of learning outcomes through the sense of sight ranges from 75%, through the sense of hearing around 13% and through other senses around 12%. Thus, visual learning media has a greater influence than learning media through audio.

Research Methods

This research has been carried out in SMP Negeri 3 Kikim Timur, Kikim Timut District, Lahat Regency, South Sumatra Province. The implementation is carried out in approximately 6 months, namely September-March 2023 starting from preliminary studies to the product testing and evaluation process.

This type of research is research and development (R&D) with qualitative and quantitative research approaches. This R&D is based on video-based physical education learning on football material, which has been tested, validated, and revised to obtain media, demonstrating the effectiveness and feasibility of its value. The resulting product is a video-based Physical Education learning media made from basic football techniques. From several existing development research models, the author decided to use the ADDIE model, the basis for consideration of choosing the use of the ADDIE model, the selection of this model is based on the consideration that this model is developed systematically and is based on the theoretical foundation of learning design besides that

because each step in the development procedure stage is explained in detail, what researchers will do when developing products in the form of learning media video- based, and *manual book*.

The research method used is to adopt from the *ADDIE development model* the procedures for using the ADDIE model include: 1) *Analyze*, 2) *Design*, 3) *Develop*, 4) *Implement*, and 5) *Evaluate* (Branch, 2009). Research and development in the field of education is a development model that has advantages at the stage of systematic work. Each phase is evaluated and revised from the stages passed, so that the resulting product becomes a valid product.

The stages in research and development include several things: 1) The preliminary study stage; 2) The conceptual design stage of the model; and 3) Design development stage; 4) Product implementation stage; 5) Product evaluation stage. This Physical Education learning media development procedure follows the steps of product development according to *the ADDIE* model pattern.

Data collection techniques in research are carried out through several methods, namely observation, interviews, questionnaires and test methods. Data analysis techniques in this study consist of validity, practicality, and effectiveness analysis.

Results and Discussion

A. Data Analysis of Expert Validation Results

Data obtained from suggestions and input during validation by experts are used for improvements in the development of physical education learning media based on learning videos on soccer material. Here are the results of the validation assessment percentage from experts:

1. Validity

The total score of media experts = 45, the maximum score = 52 then the percentage of validity results in media experts is: $45 \times 100 = 86.53\%$. Total score of material experts = 42, maximum score = 48 then the percentage of validity results in material experts is: $42 \times 100 = 87.50\%$. And the total score of learning experts = 47, the maximum score = 52 then the percentage of validity results in learning experts is $47 \times 100 = 90.38\%$.

The data above shows that the percentage of assessment in the media aspect of 86.53% is located in the interval 86-100 is categorized as very good, as well as the aspect of pencak silat material shows a percentage of 87.50% is categorized as very good, and in the aspect of instruments in learning shows a percentage of 90.38% is also classified as very good. In addition to getting the assessment, there are several suggestions submitted by validators, including:

- a. Adjust the colors on the appearance of the application
- b. Add images inside the material with *different angles*

The revision of learning video media has been in accordance with the criticism or suggestions given by validators, including:

- a. In-app colors and contrasts are already customized for all menus

- b. Side view images and videos have been inserted into the app
- 2. Practicality

Practicality data was sourced from teacher responses through questionnaire answers totaling 12 statements with *Likert scale*. The respondents' answers are scored and then presented as the following table:

Table 1
Teacher Response to Learning Media

No	Statement	Shoes										Σ	%
		1	2	3	4	5	6	7	8	9	10		
1.	Learning media developed can improve cognitive and psychomotor abilities	4	4	3	4	3	3	4	4	3	4	36	90,0
2.	Interesting media Learner learning developed learner interest	4	4	4	3	4	3	3	4	4	4	37	92,5
3.	The material provided is more varied so that it adds interest in learning	4	3	3	4	3	4	3	3	4	4	35	87,5
4.	The material has been arranged in a coherent and systematic manner so that it is easy to apply.	3	3	4	3	3	4	4	3	4	3	34	85,0
5.	The material can be implemented on time	3	4	4	4	3	3	4	4	3	3	35	87,5
6.	The material has included indicators in Curriculum	4	4	4	3	4	4	4	3	3	4	37	92,5
7.	7 The material does not use harmful movements that may pose risks injury.	4	4	4	3	3	4	3	4	4	3	36	90,0
8.	8 The material gives a pleasant feel.	3	4	4	3	4	3	3	4	4	3	35	87,5
9.	9 Matter involves movements that can Improve skills football	3	3	4	3	4	3	3	4	3	4	34	85,0
Total												319	797,5
Average												35,4	88,6

The percentage (%) in the table above, is calculated using the formula:
 $P = x \times 100\%$

Information:

P = percentage value

R = total score

SM = maximum score, in the table above SM = 40

100% = constant value

The response of teachers to the development of learning video media such as the table above is very high with a percentage of 88.6%.

3. Effectiveness

To see the results of the effectiveness, *pre-test* and *post-test* were carried out in small groups and large groups. Small group trials were carried out in class IXA SMPN 3 Kikim Timur which was carried out on 15 students and large group trials were carried out on 35 students in class IXC SMPN 3 Kikim Timur. The test results can be seen in the following table:

Table 2
Small Group Normality Test Results
One Sample Kolmogorov Smirnov Test

	N	<i>POST_TEST</i>	
		<i>PRE_TEST</i>	
<i>Normal Parameters^{a,b}</i>			
<i>Mean</i>		69.0000	74.6000
<i>Std. Deviation</i>		1.19523	1.18322
<i>Most Extreme Differences</i>			
<i>Absolute</i>		0.199	0.168
<i>Positive</i>		0.135	0.168
<i>Negative</i>		-0.199	-0.166
<i>Test Statistic</i>		0.199	0.168
<i>Asymp. Sig. (2-tailed)</i>		0.115c	0.200c, d

a. *Test distribution is Normal.*

The table above, obtained by *Asymp. Sig (2-tailed)* in the *post test* column 0.115 and the *pre test* column 0.200. Based on the test criteria, it is declared *Asymp. Sig (2-tailed) > 0.05*, so the pretest and posttest data of small groups are normally distributed so that effectiveness analysis can be continued using paired sample tests, the results of which appear in the following table:

Table 3
Small Group Effectiveness Analysis
Paired Samples Test

<i>Paired Differences</i>	t	Sig. (2- df tailed)
<i>Std. Error</i>		
<i>95% Confidence Interval of the Difference</i>		

	<i>Deviatio Mean</i>	<i>Lower</i>	<i>Upper</i>
<i>Meann</i>			
<i>Pair 1 POST_TEST</i>	5.60000	1.18322	0.30551
<i>PRE_TEST</i>	4.94476	6.25524	18.330

The table above in column t obtained a calculated t value of 18.330. Next, we find the magnitude of the table t value with $dk = 15 - 1$, and the odds $(1 - \alpha)$, where $\alpha = 0.05$ are obtained 1.761. Based on the test criteria, it is stated that $t_{count} > t_{table}$ or $18,330 > 1,761$, so the development of learning video media on soccer material effectively improves the cognitive abilities of students.

Table 4
Large Group Normality Test Results
One Sample Kolmogorov Smirnov Test

	<i>POST_TEST</i>	<i>PRE_TEST</i>
N	35	35
<i>Normal Parameters a, b</i>	<i>Mean</i>	74.7714
	<i>Std. Deviation</i>	1.35225
<i>Most Extreme Differences</i>	<i>Absolute</i>	0.144
	<i>Positive</i>	0.144
	<i>Negative</i>	-0.139
<i>Test Statistic</i>		0.144
<i>Asymp. Sig. (2-tailed)</i>		0.062c

b. *Test distribution is Normal.*

The table above, obtained by *Asymp. Sig (2-tailed)* in the *post test column 0.062* and the *pre test column 0.052*. Based on the test criteria, it is declared *Asymp. Sig (2-tailed) > 0.05*, so the pretest and posttest data are normally distributed so that effectiveness analysis can be continued using paired *sample tests*, the results of which appear in the following table:

Table 5
Small Group Effectiveness Analysis
Paired Samples Test

<i>Paired Differences</i>	<i>t</i>	<i>Sig. (2-tailed)</i>
<i>Std. Error</i>		
<i>95% Confidence Interval of the Difference</i>		
<i>Lower</i>		
<i>Upper</i>		

<i>Pair 1</i>	<i>POST_TEST</i>	5.60000	1.18322	0.30551	4.94476	6.25524	18.330	14	0.000
	<i>PRE_TEST</i>								

The table above in column t obtained a calculated t value of 18.330. Next, we find the magnitude of the table t value with $dk = 15 - 1$, and the odds $(1 - \alpha)$, where $\alpha = 0.05$ are obtained 1.761. Based on the test criteria, it is stated that $count > t$ table or $18,330 > 1,761$, so the development of learning video media on soccer material effectively improves the cognitive abilities of students.

Table 6
Large Group Normality Test Results
One Sample Kolmogorov Smirnov Test

		<i>POST_TEST</i>	<i>PRE_TEST</i>
N		35	35
<i>Normal Parameters</i> , b	<i>Mean</i>	74.7714	69.1429
	<i>Std. Deviation</i>	1.35225	1.33158
<i>Most Extreme Differences</i>	<i>Absolute</i>	0.144	0.147
	<i>Positive</i>	0.144	0.147
	<i>Negative</i>	-0.139	-0.140
<i>Test Statistic</i>		0.144	0.147
<i>Asymp. Sig. (2-tailed)</i>		0.062c	0.052c

c. *Test distribution is Normal.*

The table above, obtained by *Asymp. Sig (2-tailed)* in the *post test column 0.062* and the *pre test column 0.052*. Based on the test criteria, it is declared *Asymp. Sig (2-tailed) > 0.05*, so the pretest and posttest data are normally distributed so that effectiveness analysis can be continued using paired *sample tests*, the results of which appear in the following table:

Table 7
Large Group Effectiveness Analysis
Paired Samples Test

<i>Paired Differences</i>	t	df	Sig. (2-tailed)
<i>Std. Deviation</i>	<i>Mean</i>	<i>Lower</i>	<i>Upper</i>
<i>Meann</i>			
<i>Pair 1</i>	<i>POST_TEST</i>	5.62857	1.13981
	<i>-PRE_TEST</i>	0.19266	5.23703
		6.02011	29.215
		34	0.000

The table above in column t obtained a calculated t value of 29.215. Next, we find the magnitude of the table t value with $dk = 35 - 1$, and the odds $(1 - \alpha)$, where $\alpha = 0.05$ are obtained 1.691. Based on the test criteria, it is stated that $t \text{ count} > t \text{ table}$ or $29.215 > 1.691$, so the development of learning video media on soccer material effectively improves the cognitive abilities of students.

Discussion

Development of Learning Media Based on Learning Videos

This development uses the Research & Development (R&D) method. Research & Development (R&D) or Research and Development. The learning media design model or approach is the ADDIE model which consists of several stages, namely: (1) Analysis; (2) Design; (3) Development; (4) Implementation; (5) Evaluation.

The first stage is the analysis stage. In the analysis there are 2 stages. Needs Assessment in the form of analysis of field conditions and participants as well as collection of material references that will be used as the subject of discussion in media development. The results of information about the learning process, student characteristics and the development of learning media obtained from observation activities carried out when carrying out research. The next activity is *Front-end Analysis* by collecting references in the form of curriculum, syllabus, lesson plans, and teaching modules for pencak silat materials as well as books related to the material and others needed in the development of learning media. The results of the analysis then selected 2 curricula to be included in the learning media, namely the Independent Curriculum and the 2013 Curriculum.

The second stage is Design. The design stage is the stage of designing learning video-based learning media which includes the formulation of the objectives of making learning media, making *flowcharts*, collecting documentation, collecting design objects, and arranging feasibility test instruments.

The third stage is Development. This development stage is the stage of creating and developing learning media from all components that have been prepared into a whole unit in accordance with the *flowchart* that has been designed. After the media has been created, validation is carried out by media experts, material experts, and learning experts to obtain input on the development accompanied by this video-based learning media feasibility assessment instrument.

The fourth stage is implementation. At this stage, the interactive learning media that has been completed is then implemented to students in grade IXC SMPN 3 Kikim Timur, Lahat Regency. This implementation aims to determine the response of students to the video-based learning media developed results. From this stage, it will be known the feasibility of the media developed.

The fifth stage is evaluation. The evaluation carried out is in the form of evaluation of development and evaluation of the feasibility of learning media products. Development evaluation is carried out by media experts, material experts, and learning

experts to determine the feasibility of the development learning media, and to measure whether or not the development learning media is disseminated and used at the junior high school level. The evaluation of learning media products was carried out by Physical Education teachers who are members of the MGMP (Subject Teacher Conference) of Banyuasin Regency to find out how responses about the developed media. From the evaluation above, it will provide data that describes the quality of the learning media product whether it is valid or invalid. According to Wibowo (2016) one of the characteristics of successful learning can be concluded from the level of learning of students, the higher the learning of students, the greater the chance of success. Meanwhile, Hadi (2017) said students are considered successful in achieving learning goals if they show changes in knowledge, attitudes and skills that are better than before. From some of these opinions, the development of video-based physical education learning media on soccer material can be said to be successful.

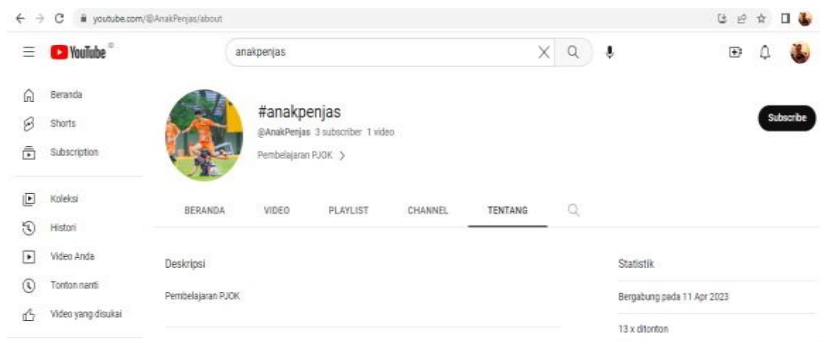
Some previous studies that stated that innovation and development in audio-visual or multimedia-based learning media that support the achievement of improving the cognitive aspects of students include research conducted by Vai et al., (2019) which concluded that the development of multimedia-based soccer learning media at the high school / MA level using one of the software called Adobe Flash CS has proven effective and can be used in the process learn to teach football. In this study, researchers prefer to develop learning media in the form of video applications so that students and teachers can more easily access at any time the learning media.

Effectiveness of Video-Based Learning Media

Video-based physical education learning media on soccer material for junior high school levels that have been developed have been tested for validity, practicality, and effectiveness in their application. The results of the effectiveness test that have been carried out found data that the development of video-based learning media on soccer material is effective in improving the cognitive abilities of students. Through observations made by researchers, it is also seen that changes in student interest when the teaching and learning process is applied using the developed learning media.

Final Product Results

The final product is the result of the development / creation of android-based learning media on junior high school football material which is final. This media is the result of research and development carried out. This product will later be distributed to students and teachers in Physical Education subjects, especially junior high school football materials. This video-based application product can be accessed via *youtube* with keywords “#anakpenjas”.



Gambar 1
Tampilan Dinding pada *Youtube*

Product Limitations

In the development of this video-based physical education learning media product, there are still limitations. The following are the limitations of video-based physical education learning media products:

1. There is no instrument to measure aspects of student attitudes in the use of video-based learning media.
2. The product is only limited to Android-based mobile phone users and includes iOS users but must be *online*.
3. The process of taking pictures on video-based learning media, is still sober according to the ability of researchers and does not use professional services.

Conclusion

Based on the results of research and discussion stated in the previous chapter, the development of video-based learning media can be concluded as follows: 1) The development of video-based learning media on junior high school football material was developed with the *ADDIE model*. Learning media contains Learning Outcomes, Basic Competencies, learning objectives, indicators, material descriptions in accordance with the curriculum, as well as photos and video tutorials of movements so that students better understand the material. There are 2 types of evaluation, namely multiple choice and description to measure student understanding in the learning process. The advantage of this learning media is that it can be used *online and offline*, so students who do not have internet access on *their mobile phones* can access the material anytime, anywhere, without limited space and time. 2) The feasibility test results of video-based learning media from media experts obtained a feasibility percentage of 86.53% in the Very Good category, for the results of material experts of 87.50% in the very good category, and the results of learning experts of 90.38% in the very good category. As well as for the practicality test of physical education teacher respondents amounted to 88.6% in the very good category. Based on the results of these tests, video-based Physical Education Learning Media on junior high school football material is suitable for use in the learning process. (3) Product advantages: a) This learning media can be accessed on android mobile phone types starting from version 5.0, b) This application can be accessed *online*

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and offline, c) Photos and videos are available along with explanations of every movement in the material making it easier for students to understand the material, d) The application can be accessed on the playstore and downloaded at any time without having to use a password. There are also product shortcomings, including: The product is only limited to Android-based mobile phone users and includes iOS users but must be *online*, The process of taking pictures and videos on video-based learning media, is still modest in accordance with the ability of researchers, and does not use professional services.

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