



# Animated Video Based on Tri Hita Karana Fourth Grade Energy Sources Learning Topic

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## ABSTRAK

Proses pembelajaran yang berlangsung secara konvensional membuat siswa cenderung merasa bosan dan berpengaruh terhadap kompetensi pengetahuan siswa. Penelitian ini bertujuan untuk menciptakan video animasi berbasis Tri Hita Karana topik sumber energi muatan IPA. Penelitian ini adalah penelitian pengembangan dengan menerapkan model pengembangan ADDIE. Subjek penelitian ini adalah respon siswa, 2 ahli media, 2 ahli materi, dan 2 praktisi. Penelitian ini menggunakan metode pengumpulan data kuesioner atau angket, untuk mengukur validitas menggunakan instrument rating scale. Metode dan teknik analisis data dalam penelitian ini menggunakan analisis deskriptif kualitatif, dan analisis deskriptif kuantitatif. Diperoleh hasil uji validitas video animasi berbasis Tri Hita Karana topik sumber energi yang teruji validitasnya dengan skor rata-rata 4,69 untuk ahli media, 4,68 untuk ahli materi, 4,69 untuk ahli praktisi dan hasil uji siswa atau respon siswa rata-rata 5. Kesimpulan bahwa video animasi berbasis tri hita karana topik pembelajaran sumber energi memiliki kualitas sangat baik dan layak digunakan pada mata pelajaran IPA kelas IV sekolah dasar. Implikasi penelitian ini dapat memfasilitasi siswa dalam memahami materi sumber energi menggunakan media video animasi.

## ABSTRACT

The conventional learning process makes students feel bored and affects their knowledge competency. This research aims to create an animated video based on Tri Hita Karana on natural science energy sources. This research is development research by applying the ADDIE development model. The subjects of this research were student responses, 2 media experts, 2 materials experts, and 2 practitioners. This research uses a questionnaire or questionnaire data collection method to measure validity using a rating scale instrument. Data analysis methods and techniques in this research use qualitative and quantitative descriptive analysis. The validity test results of the animated video based on Tri Hita Karana on the topic of energy sources were obtained, the validity of which was tested with an average score of 4.69 for media experts, 4.68 for material experts, 4.69 for practitioner experts and student test results or average student responses average 5. In conclusion, the Tri Hita Karana-based animated video on learning energy sources is very good quality and suitable for fourth-grade science subjects in elementary schools. This research implies that it can facilitate students' understanding of energy source materials using animated video media.

## 1. INTRODUCTION

The development of science and technology in the field of education is known as education, namely an electronic media-oriented education system. The application of science and technology in education will of course produce a technology-oriented learning system, especially learning media (Firmadani, 2020; Kusuma et al., 2021). Learning media is a channel or intermediary that can be used to channel messages (learning materials) so that they can stimulate the attention, interest, thoughts and feelings of learners (students) in learning activities to achieve certain learning goals (Hasan et al., 2021; Mahendra, 2021). With the existence of learning media, the learning process can improve. Media is one of the factors that plays an important role during the learning process (Nanda & Simamora, 2022; Wardani & Syofyan, 2018). Teachers can use media as an intermediary in conveying material so that it can be understood by their students well.

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Learning media has a role in providing, making it easier for learners to better understand and channel information in teaching and learning activities in an educational institution or institution so that they can receive information and can be popular in improving the field of communication (Moreno-Guerrero et al., 2020). To increase effectiveness and efficiency, it is necessary to use a variety of learning methods so that it is not boring and also to attract interest from people who want to get the information so that they do not feel bored when listening.

The current reality of learning is that teachers are more dominant in the learning process (Izzaturahma et al., 2021; Swari & Ambara, 2022). The teacher's dominance in the learning process has quite a big impact on students, namely that students become less active in the learning process. Students' lack of activity in the learning process will result in students' absorption of learning material being low. In the learning process carried out by teachers, most only use one or two learning methods continuously (Juwantara, 2019; Sadikin & Hakim, 2019). The learning method that is often used by teachers today is the lecture method (Dewi et al., 2022; Sari, 2022). Apart from that, the use of learning media that can activate the learning process is very lacking, as indicated by the use of only student books in the learning process (Eleaser et al., 2023; Suwastawan et al., 2022). Based on the results of interviews and observations with fourth grade elementary school teachers, there were several problems that emerged during the learning being carried out, namely that students had difficulty understanding the lesson material due to online learning. During the learning process, teachers still rarely use animated video media in delivering material for science content. Lack of teacher creativity in developing interesting and creative learning media. Based on field realities, it turns out that many schools are still unable to take advantage of technological advances, especially in the use of learning media. Efforts to overcome this include forms of stimulus that can be used as media, including human relationships or interactions, reality, moving images or not, writing and recorded sound. These five forms of stimulus will help students learn science. However, it is not easy to get all five forms at one time or place. Therefore, learning media is needed to be able to overcome these problems.

The solution to overcome this problem is by using learning media. Learning media must increase student motivation. The use of media has the aim of providing motivation to students. Apart from that, the media must also stimulate students to remember what they have learned in addition to providing new learning stimuli. Good media will also activate students in providing responses, feedback and also encourage students to carry out practices correctly (Prasetyo, 2017). Learning media can improve students' learning process, namely that learning will attract more students' attention so that it can foster learning motivation (Hamidah, 2019; Pebriani et al., 2021). The meaning of learning materials will be clearer so that they can be better understood by students, and enable students to master the learning objectives better. Teaching methods will be more varied. Students do more learning activities, because they not only listen to the teacher's explanations, but also carry out activities such as observing, demonstrating and so on, all of which can be done by using learning media based on developments in science and technology (Agustin et al., 2021; Diantari & Gede Agung, 2021; Mudasih & Subroto, 2019). One of the learning media that can be used is electronic media in the form of animated videos, because through animated video media learning can be carried out in interesting and fun situations for students, so it will be easier for students to understand the learning material presented by the teacher (Maranatha & Putri, 2021; Valentina & Sujana, 2021). Learning video media is media that presents audio and visuals containing good messages containing concepts, principles, procedures, application theories that help understanding of learning material (Sukarini & Manuaba, 2021; Taqiya et al., 2019). Apart from that, the use of learning video media in the learning process can also help students understand the material more clearly because the material explained can be repeated until students feel they can understand the learning material very well (Ar et al., 2021; Artayana et al., 2022).

The animated video media developed is integrated with the values of Tri Hita Karana (THK). All the development of learning media uses digital comic media combined with Tri Hita Karana teachings, it is hoped that the learning process carried out will create student participation and attention, and the learning process can produce a fun and meaningful atmosphere to be able to build students' understanding and knowledge about the topics being explained. In this regard, students are able to establish harmonious relationships with God, between humans and the surrounding environment so as to create a sense of comfortable, peaceful and peaceful life (Karmini et al., 2021; Tiarini et al., 2019). The concept of the Tri Hita Karana teachings introduces religious values, cultivating social values, respecting gender, cultivating the value of justice, developing democratic attitudes, cultivating an attitude of honesty, showing an attitude of honesty, improving attitudes and fighting power, developing an attitude of responsibility, and respect for the natural environment (Artayana et al., 2022; Widnyana, 2018). Previous research findings stated the Tri Hita Karana concept as an effort to build student character at school (Rai et al., 2022). Digital comic media based on Tri Hita Karana on the topic of the water cycle for Class V Elementary School is suitable for use for learning activities (Supartayasa & Wibawa, 2022). The existence of tri hita karana content integrated with

the topic of energy sources in animated video media is the latest research and differentiates it from another research. Based on the latest information and advantages that have been explained, the research objective was formulated, namely to create a Tri Hita Karana-based learning video on the topic of learning about energy sources. It is hoped that the development of this media can become a learning medium that can help teachers and students in learning activities so that it can increase student interest and quality of learning.

## 2. METHOD

This research is development research (Research and Development) by adapting the ADDIE development model which consists of 5 steps/stages, namely analyze, design, development, implementation, evaluation (Tegeh & Sudatha, 2019). The product trial phase in this development research is carried out by conducting media reviews by experts to test the suitability of the media being developed. Based on the results of the review by 6 experts consisting of 2 media experts, 2 material experts and 2 practitioners, this will be used as material for analysis and revision of the learning videos that will be developed. The trial subject of this research was the development of an animated video on the topic of energy sources in science content for class IV elementary school. This learning video will be tested by several experts to determine the suitability of the media developed. The object of this research test is the validity of the animated video on the topic of energy sources in science content for fourth grade elementary school. The data collection methods used in this development research are observation, interviews and questionnaires. This research uses a rating scale assessment instrument. Rating scales are raw data similar to numbers which are then interpreted based on a scale from low to high (Ilhami & Rimantho, 2017). The instruments used in this research are presented in Table 1, Table 2, and Table 3.

**Table 1. Media Expert Validity Instrument Grid**

No	Aspect	Indicator	Item No
1	Visual	a. Image clarity	1
		b. Suitability of shooting	2
		c. Attractive colors, backgrounds, images and animations	3
		d. Image movement speed	4
		e. Accuracy of image movement	5
2	Audio	a. Voice clarity	6
		b. Sound rhythm	7
		c. Music suitability	8
3	Typography	a. Selection of text type	9
		b. Accurate text size	10
4	Presentation	a. Has attraction	11
		b. Time duration	12
		c. Clarity of story line	13
<b>Amount</b>			<b>13</b>

(Azhar, 2014)

**Table 2. Material Expert Validity Instrument Grid**

No	Aspect	Indicator	Item No
1	Material	Clarity of learning material	1
		Suitability of learning videos with learning objectives	2
		Suitability of learning videos with learning materials	3
		Accuracy of distribution and consistency of material	4
		Conformity of language with Indonesian language rules	5
2	language	The sentences used are easy to understand and understand	6
		The communicative nature of the language used	7
		Language level with students' cognitive level	8
<b>Amount</b>			<b>8</b>

**Table 3. Learning Practitioner Instrument Grid**

No	Aspect	Indicator	Item No
1	Visual	Image clarity	1
		Suitability of shooting	2
		Attractive colors, backgrounds, images and animations	3
		Image movement speed	4

No	Aspect	Indicator	Item No
2	Audio	Lighting accuracy	5
		Voice clarity	6
		Sound rhythm	7
		Music suitability	8
3	Typography	Selection of text type	9
		Accurate text size	10
4	Material	Clarity of learning material	11
		Suitability of learning videos to learning objectives	12
		Suitability of learning videos with learning materials	13
		Accuracy of division and sequence of material	14
5	Language	Conformity of language with Indonesian language rules	15
		The sentences used are easy to understand and understand	16
		The communicative nature of the language used	17
		Language level with students' cognitive level	18
6	Integration	Has attraction	19
		Time duration	20
		Clarity of story line	21
<b>Amount</b>			<b>21</b>

Data analysis methods and techniques in this research use qualitative descriptive analysis and quantitative descriptive analysis. This qualitative descriptive analysis method is where the research acts as an instrument and is an absolute research presence (Agung, 2014). The qualitative descriptive analysis method in this research was used to process data originating from suggestions and criticism from the results of reviews by experts on media which were developed through media assessment sheets in the form of questionnaires or questionnaires. The quantitative descriptive analysis method was used to describe the average score of the learning videos developed. The average validity score of the learning videos developed was obtained using the mean formula. The average score obtained was then converted using the five scale conversion guidelines to determine the validity of the media being developed. The five scale conversion guidelines used have been modified in Table 4.

**Table 4. Five Scale Conversion Guidelines**

Score Range	Clarification/Predicate
4.22 - 5	Very Valid
3.41 - 4.21	Valid
2.61 - 3.40	Fairly Valid
1.80 - 2.60	Invalid
1 - 1.79	Very Invalid

(Mukholifah et al., 2020)

### 3. RESULT AND DISCUSSION

#### Results

The results of this research are in the form of an animated video which has been declared very valid. The subjects in this research involved several experts, consisting of six experts including two media experts, two material experts, and two practitioner experts or teachers. In this research, the ADDIE model is used, which has 5 stages, namely analysis, design, development, implementation and evaluation (Semara & Agung, 2021). However, the implementation and evaluation stages were not carried out due to time constraints and unfavorable conditions. At the analysis stage (Analyze) there are four parts that can be carried out, namely student characteristics analysis, curriculum analysis, needs analysis, and media analysis. At the analysis stage, it shows that the media used by searching for videos on YouTube is still lacking due to the lack of teachers who can create their own media. Therefore, it is necessary to develop animated video media as an energy source.

Design stage of an animated video based on Tri Hita Karana on the topic of learning about energy sources. This design stage begins with creating a storyline and determining the material that will be developed according to the conditions in elementary schools. The material chosen is an energy source. Then create a video design and material design. The material design is prepared based on the aim of developing material through animated videos. Animated videos have a ratio size of 16:9 and a resolution of 1080. When making videos, use animation and images according to the material. development stage (Development), This stage is a step in creating media that is developed based on a design that has been approved by the

supervisor. In making learning media, several tools and materials are used, namely green cloth, cellphones, and tripods. The energy source animation video was completed and then uploaded to the YouTube channel. After the animated video has been developed, it is then carried out for assessment with product trials. Product trials were carried out to determine the level of validation of the video media being developed. Animated video media assessed by 2 media expert lecturers, 2 material expert lecturers and 2 teachers or practitioners. Then after completing the validity test, it will continue with improving the energy source animation video. Revisions are made with input and suggestions obtained from expert lecturers and teachers or practitioners. The results of the validity test of the animated video are presented in [Table 5](#).

**Table 5. Animation Video Validity Test Results**

No.	Expert	Average Score	Information
1.	Media Expert	4.69	Very Valid
2.	Materials Expert	4.68	Very Valid
3.	Learning Practitioner	4.69	Very Valid

Based on [Table 5](#), the values obtained from the experts will be analyzed to determine the level of validation of the animated video being developed. Analysis was carried out using the average score obtained. The values obtained will be converted according to the five scale conversion guidelines. There is an overall assessment of the energy source animation video with an average score from experts. The average score of the video validation test was 4.69, the energy source animation video was assessed based on the five scale conversion guidelines, namely in the range 4.22 – 5, very valid. With these results, all aspects of energy source animated video media have very valid qualifications. The average score for the material validation test was 4.68 for animated videos of energy sources which were assessed based on the five scale conversion guidelines, namely in the range 4.22 – 5, which is very valid. With this value, all aspects of energy source animated video material have very valid qualifications. The average validation test score for practitioners or teachers is 4.69 for energy source animation videos which are assessed based on the five scale conversion guidelines, namely in the range 4.22 – 5, which is very valid. With this value, all aspects of energy source animated video material have very valid qualifications. With this value, all aspects of Tri Hita Karana-based animated learning videos have practical qualifications.

**Discussion**

The research results show Tri Hita Karana based animated learning videos are very valid or very good to use in learning. This can be seen from the results of the validity analysis by material experts, that the material/content aspect is stated to be complete and clear, there are learning objectives that are clearly conveyed, the correctness of the concept or content of the material is stated to be very good. This is very in line with the characteristics of elementary school students, where elementary school students are at the concrete operational development stage. At this stage, students can only understand material or knowledge that is concrete or that students can compare with students' daily lives. In the learning media aspect, the learning videos developed have designs using images or animations that have bright color patterns. By having animated images and bright colors, it will attract students' interest in learning ([Eleaser et al., 2023](#); [Suwastawan et al., 2022](#)). This can indicate that the media developed in this research will be very useful in the learning process because it can increase student interest. Energy source animated video media is designed to attract students' attention in an interesting and creative learning process ([Candra Dewi & Negara, 2021](#); [Pratiwi et al., 2021](#)).

Tri Hita Karana-based animated learning video media is very valid or very good for use in learning. This is because animated video media has advantages. The advantage of animated videos on energy sources is that animated videos can provide information that is easy to understand, including various developments in science and technology. Animated videos can be accessed for free via the internet network. Animated videos are very popular and more and more students are accessing videos on YouTube so they can have an influence on education at school. Practical and complete animated videos can be used easily by all groups and there are many learning videos that can be used as a source of information. Animated videos can also be shared with other people by sharing the link in the video. Animated videos can also be used for questions and answers and discussions via the comments column ([Didik Prawira Putra et al., 2021](#); [Pramesty et al., 2022](#)). The advantage of the animated video developed is that this video contains examples that can clarify the message so that students can easily understand the learning material. Animated videos have an impact on students' enthusiasm and motivation to learn ([Friska et al., 2022](#); [Schubertová et al., 2023](#); [Supriyani et al., 2021](#)). Learning will be more meaningful if it is carried out by incorporating local wisdom values to prevent cultural erosion and as an effort to strengthen students' character ([Gorda & Anggria Wardani, 2020](#); [Parmajaya, 2020](#)).

This finding is reinforced by previous research findings stating that vlog media in learning can increase learning effectiveness and have a positive influence on students in learning (Aini et al., 2021). Animation media can make it easier for students to understand learning material (Wulandari, 2019). Animation can increase student learning motivation so that it can improve student learning outcomes (Eleser et al., 2023; Mayang Ayu Sunami & Aslam, 2021; Sukarini & Manuaba, 2021). With animated video media, teachers find it helpful, teachers can also create more creative video media in the learning process (Setiono & Rami, 2017). Interactive learning animation videos based on Tri Hita Karana to improve elementary school student learning outcomes (Prawira, 2021). The Tri Hita Karana local wisdom-based learning video is valid and therefore suitable for use (Artayana et al., 2022). The limitations in this research are that the implementation and evaluation stages were not carried out due to time constraints and unfavorable conditions. The implication of this research is one of the studies that produced an animated video based on Tri Hita Karana on the topic of learning about energy sources in Class IV elementary school science learning. The use of animated video media based on tri hita karana on the topic of learning about energy sources in science learning in Class IV elementary schools with very valid qualifications so that it is suitable for use in the learning process in class IV elementary schools. Teachers feel helped in the learning process and can facilitate students in understanding energy sources material using animated video media.

#### 4. CONCLUSION

Tri Hita Karana based animated learning videos are very valid or very good to use in learning. Then the practicality of this animated learning video based on Tri Hita Karana was proven to be practical and suitable for use in the science learning process regarding energy sources in class IV elementary schools.

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