

Development of "Material Gaya" Teaching Materials Based on Creative Science Videos (CSV) for Class VIII Junior High School Students

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Abstrak:

Bahan ajar merupakan sumber bagi guru dan peserta didik untuk melaksanakan proses pembelajaran. Oleh karena itu, perlu dikembangkan bahan ajar inovatif yang memungkinkan siswa mencapai hasil belajar yang unggul. Salah satu bahan ajar yang inovatif dan kreatif adalah Materi Ajar Berbasis Video Kreatif Sains (CSV). Dalam penelitian ini, kami bertujuan untuk mengkomersialkan bahan ajar Sains kreasi dengan menggunakan video sebagai bahan ajar gaya. Kami juga menilai kualitas produk berdasarkan materi dan laporan media. Variabel penelitian divalidasi oleh ahli materi, ahli dan video. Selain itu, kualitas profesional media audiovisual memiliki potensi besar. Penelitian ini merupakan R n D dengan hasil evaluasi statistik verifikasi ahli materi menurut tipe CSV mencapai 3.62, ahli media mencapai 3.84. Oleh karena itu, kesimpulan dari penelitian ini adalah bahan ajar IPA seperti bahan ajar gaya dapat dikembangkan melalui Bahan Ajar Berbasis Video Kreatif Sains (CSV).

Abstract:

Teaching materials are a resource for teachers and students to carry out the learning process. Therefore, it is necessary to develop innovative teaching materials that enable students to achieve superior learning outcomes. One of the innovative and creative teaching materials is Creative Science Video-Based Teaching Materials (CSV). In this study, we aim to commercialize creative science teaching materials by using videos as style teaching materials. We also assess product quality based on materials and media reports. The research variables were validated by material, expert and video experts. In addition, the professional quality of audiovisual media has great potential. This research is an R n D with statistical evaluation results of material expert verification by CSV type reaching 3.62, media experts reaching 3.84. Therefore, the conclusion of this study is that science teaching materials such as style teaching materials can be developed through Creative Science Video-Based Teaching Materials (CSV).

Kata Kunci : Bahan ajar; Gaya; Pengembangan; Media Video

Keywords : Teaching materials; Gaya; Development; Video Media

Introduction

Teaching materials can be interpreted as learning materials or content that are arranged completely and systematically based on the learning principles used by teachers and students in the learning process (Haftador et al., 2021; RWA Sah et al., 2023; Sekaryanti et al., 2022) The use of teaching materials in the learning process is very important, especially for (Darmayanti et al., 2022; Dziuban et al., 2018; MM Effendi et al., 2022). In addition, the material has a very important function that supports the success of learning (Rizki et al., 2022; Zabolotniaia et al., 2020)(Darmayanti, et al., 2022; Schabarum & Chishman, 2020)(Canessa & Tenze, 2021; Fauza et al., 2022; Sugianto, et al., 2022)(Darmayanti, et al., 2022; Schabarum & Chishman, 2020)(Canessa & Tenze, 2021; Fauza et al., 2022; Sugianto, et al., 2022).

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The material is part of the learning resources used to help teachers and students during the learning process (Canessa & Tenze, 2021; Fauza et al., 2022; Sugianto, et al., 2022). In addition, the material helps students learn both outside and inside the school individually or in groups (ND Safitri et al., 2023; Rahmah et al., 2022; RWA Sah et al., 2022). The concept of teaching materials is well developed and includes aspects of composition and design of teaching materials (Fauza et al., 2022; Rahmah et al., 2022; Sekaryanti et al., 2022). One of the developments is the development of teaching materials in video format (Darmayanti, et al., 2022; Schabarum & Chishman, 2020)).

The design of the development of teaching materials using video media has advantages in terms of audiovisual (Darmayanti et al., 2023; van der Meij et al., 2017; Wulandari et al., 2022). In addition, (Kramer et al., 2020) found that educational videos can help students in their learning process and can be an alternative in the learning process (Darmayanti, Baiduri, et al., 2022; Sugianto, Cholily, et al., 2022). In this case, learning through video media is interesting compared to other learning sources such as textbooks (Lauridsen et al., 2019). Video-based learning has the advantage of being audiovisual and can be repeated until students understand the concept of learning that is in accordance with the learning objectives (Darmayanti, et al., 2022). Another advantage is that the use of video can be a solution to the saturation of traditional learning systems (Nawani et al., 2018) In addition, video-based learning media can simplify complex material so that it is easy to understand in the learning process (Haagsman et al., 2020).

The development of teaching materials using video media in several science teaching materials has been widespread. For example, the development of educational videos as learning resources for students on the digestive system material (Juanda et al., 2021), and the development of video-based educational media on cell biology material (Haviz et al., 2018). Moreover, the development of biology learning video media is very relevant for the achievement of student learning competencies (Nidzam et al., 2020). However, the topic of science subjects is very broad and has different characteristics. However, like chemical engineering objects, they exhibit different characteristics in terms of the structure and ecology of biological materials.

Research, especially educational products. Sciences relevant to junior high school learning are explained in detail with clear and structured examples and especially in videos there are interactions such as question and answer sessions and exercises. As with the learning process in schools There are not many things that allow learning to occur. For example, the Gaya of teaching materials. Therefore, it is necessary to conduct research on the development of teaching materials based on science creation video media in Junior High Schools (SMP). The purpose of this research is to create video-based creative materials to help grade VIII SMP students master Gaya material.

Method

The survey was conducted from August to September 2022. The research site is aimed at teaching materials professionals and media professionals from the Teaching Faculty of Muhammadiyah University and its Pasuruan YALC Middle School. Moreover, this research is research and development (R&D) and the research model used is the 4D model (Definition, Design, Development, Dessimination) (Thiagarajan et al., 1974). Pay attention to the scheme of the research phase in Figure 1 below.

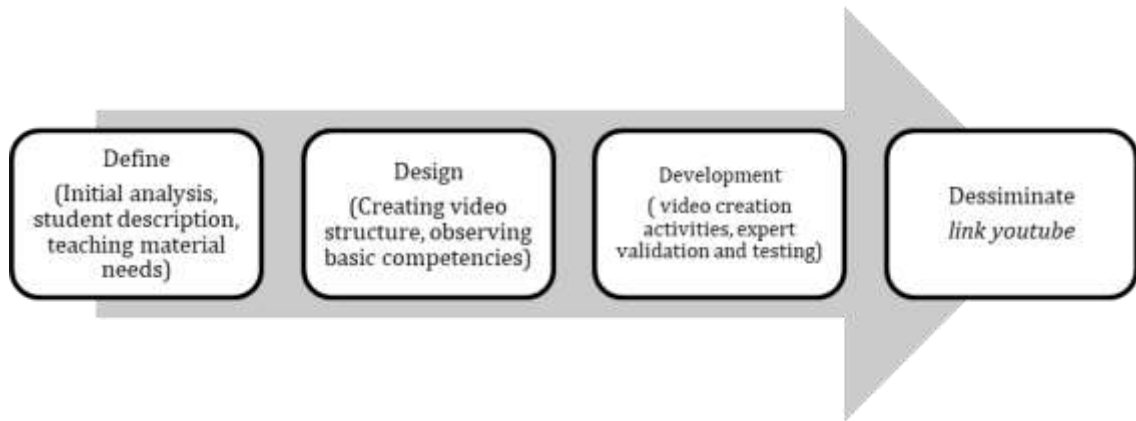


Figure 1. 4D model development

The stages of development research in Figure 1 above are: (1) Definition: The definition stage determines the problems faced in learning science based on student characteristics. In studying science, students do not focus on the material taught traditionally through textbooks, especially stylistic material. (2) Design At the design stage, the format of visual media teaching materials is designed. The format of teaching materials provided in video media is based on the contents of textbooks and learning packages that have been used so far, reviewing the core content and making lesson plans. At the design stage, we also made product evaluation tools in the form of verification questionnaires by experts and practicality evaluation sheets by students. (3) Development At the development stage, teaching materials for video media are developed. Style materials that have been distributed in traditional formats contain only simple text and images, so they can be converted to video-based materials and expanded by adding animation to the materials. This stage also includes the evaluation of material and media experts. In addition, the experiment was limited to eighth graders from the point of view of the practicality of teaching materials. The limited test was conducted on a population of 50 students of Class VIII Junior High School, and the sample used consisted of 12 individuals with a simple random sampling technique (4). The medium under test is gradually modified according to the examiner. 'suggestion. In addition, the distribution of Realschule Class VIII to students is carried out via a Youtube link (the previous video has been uploaded to the researcher's Youtube channel).

The Likert scale is used as an evaluation tool to check the effectiveness of the media used. Validation was carried out to determine the feasibility of the learning media developed before testing with learning activities

Table 1. likert scale

Pilihan Jawaban	Skor
Strongly disagree	1
Disagree	2
Disagree	3
Agree	4
disagree	5

Material Validation

Validation was carried out by two validators (two math teacher).

Table 2. Material validation sheet lattice

Number	Point of view	Item
1	Relevance between teaching materials and learning objectives	1, 2
2	The material presented is systematic	3
3	Documentation is clear and specific	4, 5
4	Clarity of material description	6, 7, 8
5	The scope of the material corresponds to the subtopics discussed	9, 10, 11
6	The material corresponds to the goals set	12, 13
7	Teaching material depends on student's ability level	14, 15, 16
8	The structure of words and the accuracy of sentences are easy to understand	17
9	The language used is clear	18, 19
10	Easy to understand sentences used	20

Media Validation

Validation is carried out by two validators (one mathematics teacher and one computer teacher)

Table 3. Grid of teaching material validation sheets

Number	Point of View	Instructions	Item
1	Contents of the video	Clarity the purpose and suitability of learning indicators	1, 2, 3
		The suitability of the material, the suitability of the illustration with the material, the systematic presentation of the material	4, 5, 6, 7,8
		The language used	9, 10, 11
		Video display	12, 13, 14
		Appropriateness of fonts and font size	15, 16
2	Display	Accuracy of video accompaniment music, text legibility, image quality, sound quality	17, 18, 19, 20
		Selection of video animation, color, attractiveness	21, 22, 23, 24, 25

The formula calculates the average validation score using the formula (average instrument score) by summing the score of each unit is then divided by the number of validators. The results of these calculations are then converted to validity by taking into account the following options: 1) if the score is more than 4.6 and less than equal to 5 (very valid), 2) if the score is more than 3.6 and less than equal to 4.5 (valid), 3) if the score is more than 2.6 and less than equal to 3.5 (fairly valid), 4) if the score is more than 1.6 and less than equal to 2.5 (invalid), and finally if the score is more than 0.0 and less than equal to 1.5 (can

not be used). If the results show a minimum value with a "valid" category, then the product can be used in the learning process.

Result and Discussion

Learning media in the CSV developed using the 4D model. The model consists of four stages, namely the define stage, the design stage, the development stage, and disseminate stages. The explanation is described as follows:

Stage Define

SMP YALC Pasuruan has problems in learning science, teachers still use traditional methods, and students are not focused and not interested in learning. At this stage, the learning objectives are formulated. In other words, after students study the material, they can define the concept of style (symbols and units of force), identify various forms (types) of style along with their functions and examples, and restate the definition of style using language and opinions found from learning so that students know the types of styles. -type and influence of style.

Stage Design

RPP, SK, and KD the results of science-based video design. The content of the video consists of an understanding of styles and types of styles, and lastly, assignments and discussions (practices) via video as the final lesson. Product evaluation tools are also created during this phase. Expert opinions include critical aspects, presentation aspects, and linguistic aspects (Darmayanti, et al., 2022). Media expertise includes visual aspects, technical quality and media typography (Sugianto, et al., 2022). Evaluation of the practicality of materials includes aspects of ease of use, completeness of materials, and attractiveness (Sugianto, et al., 2022).

Development Stage

In this research, the finished video design is then uploaded to YouTube by going through the editing process and then entering the development stage which consists of expert validation and revision activities. The following is a display of creative science video media (CSV) on YouTube which contains Gaya material.



Figure 2. VAS Material Content



Figure 3. VAS Material Content

Expert validation consists of material expert validation and media expert validation. The results of material validation obtained from the two validators are presented in Table 5. While the results of media validation carried out by two validators (two media experts who are experts in their fields). The validator conducts an investigation by filling out the material verification sheet using a four-choice Likert scale (4 = very good, 3 = good, 2 = normal, 1 = a little) is presented in Table 6.

Table 5. Results of Data Analysis of Material

Point of view	Validation Average	Information
Relevance between teaching materials and learning objectives	3.62	Very Good
The material presented is systematic		
Documentation is clear and specific		
Clarity of material description		
The scope of the material corresponds to the subtopics discussed		
The material corresponds to the goals set		
Teaching material depends on student's ability level		
The structure of words and the accuracy of sentences are easy to understand		
The language used is clear		
Easy to understand sentences used		

Overall, the average validation of the overall material in the table above is 3.62 which is a very useful (valid) category. In short, the Creative Science Video (CSV) media contains quality material and is worth trying.

Table 6. Results of Media Validation Data Analysis

Instructions	Average Validation	Information
Video Content	3.84	Very Good
Display		Very Good

Overall, from the table above, the average validation of the total media is 3.84 with a very good category (very valid), which means that CSV media deserves to be tested. Based

on the validation process that has been carried out, there are several criticisms and suggestions for improving CSV media.

The learning media in this tiktok application has been validated with the results of 3.84 with the criteria of "very valid". This is in line with research conducted by (Bahri et al., 2022; Fanaqi, 2021; Herdiati et al., 2021; Susilowati, 2018) which shows that the results of the assessment carried out by validators on learning media using video are feasible to be used as learning Media.

Conclusion

Based on the description above, the learning media in applying the Vodeo Creative Science (CSV) material to increase students' learning motivation obtained very valid results with a total average of 3.62 for material experts. Meanwhile, media experts stated that it was valid with a total average of 3.84. Due to time constraints, this research is only at the development stage and has not yet been piloted. Suggestions for researchers, it is hoped that this research can be continued until the trial stage so that the practicality and effectiveness of this CSV learning media in science learning on style material can be known.

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