



# Improving Students' Understanding of Animals' Movement Organs Through VideoScribe-based Learning

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## ABSTRAK

Guru kurang menerapkan model pembelajaran yang menarik yang dapat merangsang siswa dalam belajar. selain itu, kurangnya media pembelajaran yang dapat memfasilitasi siswa dalam belajar berdampak pada hasil belajar IPA siswa yang rendah. Penelitian ini bertujuan untuk mengembangkan video pembelajaran mengenai Organ Gerak Hewan untuk meningkatkan Pemahaman siswa dalam belajar. Jenis penelitian ini adalah penelitian pengembangan. Model yang digunakan untuk mengembangkan produk yaitu ADDIE. Teknik yang mengumpulkan data yaitu wawancara dan kuesioner. Instrumen yang digunakan untuk mengumpulkan data yaitu kuesioner. Subjek penelitian ini berjumlah 4 orang ahli. Teknik analisis dalam penelitian ini yaitu analisis statistik deskriptif kualitatif dan deskriptif kuantitatif. Hasil penelitian yaitu hasil uji dari ahli isi mata pelajaran media yang dikembangkan mendapatkan nilai 4,71 (sangat baik), hasil uji dari ahli media pembelajaran mendapatkan nilai 4,75 (sangat baik) dan hasil uji validitas dari guru media yang dikembangkan mendapatkan nilai 4,83 (sangat baik). Dapat disimpulkan bahwa media video pembelajaran mengenai organ gerak hewan berbasis video scribe layak diterapkan dalam pembelajaran. Implikasi penelitian ini yaitu media yang dikembangkan dapat memudahkan siswa dalam memahami materi organ gerak hewan dan dapat memfasilitasi siswa dalam belajar mandiri.

## ABSTRACT

Teachers do not apply interesting learning models that can stimulate students in learning. In addition, the lack of learning media that can facilitate students in learning has an impact on students' low science learning outcomes. This study aims to develop a learning video about Animal Movement Organs to improve students' understanding in learning. This type of research is development research. The model used to develop the product is ADDIE. Techniques that collect data are interviews and questionnaires. The instrument used to collect data is a questionnaire. The subjects of this study amounted to 4 experts. The analysis technique in this research is descriptive qualitative statistical analysis and descriptive quantitative. The results of the research are the test results from the content experts of the developed media subjects get a value of 4.71 (very good), the test results from the learning media experts get a value of 4.75 (very good) and the results of the validity test of the developed media teachers get a value of 4.83 (very good). It can be concluded that the learning video media regarding animal movement organs based on video scribe is feasible to be applied in learning. The implication of this research is that the developed media can make it easier for students to understand the material of animal movement organs and can facilitate students in independent learning.

## 1. INTRODUCTION

In order to compete in Industrial revolution era 4.0, human resources must be developed. Education becomes one of the keys to support the development of human resources. Education has an essential role in developing the potential and talents possessed by humans (Fatah, Widodo, & Rohmadi, 2018; Fitri, 2016; Za'im, 2016). Education makes a person having the belief, capability, creativity, and noble character. In realizing superior human resources, it may be done with a good learning process (Ayuni, Kusmariyati, & Japa, 2017; Dewi, Kristiantari, & Ganing, 2019; Hanifah & Budiman, 2019). Learning is an interaction in the educational environment between educators and students. Teachers are not only responsible for educating but also for guiding students to become better people. One of the

teacher's duties is as a facilitator and mediator (Darmadi, 2015; Lattu, 2012). The teacher must establish a comfortable and pleasant learning atmosphere for students throughout the learning process (Juniati & Widiana, 2017; Suantara, Ganing, Agung, & Wulandari, 2019). In addition, learning must also be creatively and innovatively presented to affect raising students' motivation to learn (Anika & Fajar, 2020; Widiartini, Putra, & Manuaba, 2018). Teachers need to be qualified in identifying learning models and effective learning materials for students which is adaptable to the students' characteristics so that learning goals may be maximally accomplished (Dewi et al., 2019; Diyantari, Wiyasa, & Manuaba, 2020; Jahro & Ridho, 2015).

Education in Indonesia today, however, is still far from what is anticipated, especially at the elementary school level. The difficulty nowadays is that the teacher does not use an appealing learning model to encourage students to learn (Khofiyah, Santoso, & Akbar, 2019; Pertiwi, Sumarno, & Dwi, 2019). Teachers tend to utilize the lecture method in order to convey the learning content. In addition, teachers cannot design or employ learning media that is consistent with students' characteristics during the learning process (Andriyani & Suniasih, 2021; Khan & Masood, 2015; Putra & Sujana, 2020). The use of learning media in Indonesia has not been thoroughly carried out optimally by teachers. This problem was also found in one elementary school. Based on the findings of observations and interviews conducted at SD Negeri 1 Keliki, numerous difficulties were discovered. The teaching and learning activities at school were still monotone and unappealing. It was due to the lack of learning media, which might aid students during online learning activities. In addition, teachers still take learning videos on Youtube, which means that teachers are less capable of producing learning media. The absence of teacher creativity in creating appealing learning media promotes inefficient learning, so students are less encouraged to learn. It makes it hard for students to grasp the material presented by the teacher. This issue affects low learning results for students.

Based on these difficulties, one solution is to design creative learning media that can capture students' attention in learning. Learning media is utilized to channel messages from students so that students' thoughts and attention may be stimulated in learning (Boyd, 2019; Jomezai et al., 2021; Neppala et al., 2018). This learning material has an essential significance for elementary school students (Mediatati & Suryaningsih, 2017; Prabaningrum & Putra, 2019). Children aged 6 to 12 years are still in a substantial period, so they cannot think logically or realistically (Suantara et al., 2019; Sukmanasa, Windiyani, & Novita, 2017). Therefore, teachers can benefit from learning media, enabling students to learn to be more genuine. Learning media also helps students comprehend the material rapidly (Hanifah & Budiman, 2019; Noroozi & Mulder, 2017; Qazi et al., 2021). Video is one of the learning mediums that may be utilized to facilitate students' learning. *Learning videos* are media that can help students learn through messages' transmission via audio and visual aspects (Kawka et al., 2021; Saiboon et al., 2021; Tegeh, Simamora, & Dwipayana, 2019). One type of video that can be used is *video scribe*. Video scribe is a learning media in animated videos and consists of images arranged into videos. The benefit of the *video scribe* is that music, graphics, and attractive designs may be combined (Muskania, Badariah, & Mansur, 2019; Setiyowati, 2019). Numerous variations can be adjusted to ones' needs in the video scribe program. The video scribe application may be made offline when making learning videos, which is very practical. *Videoscribe* becomes an attraction for students in learning (Rahmatika & Ratnasari, 2018; Sutrisno, Agung, Tri Sutrisno, & Yudha Anggana Agung, 2013). The development of learning videos can be accompanied by animations and other fascinating images in enabling students to understand the material presented readily. Furthermore, there are various features in *Videoscribe*, including the insertion of photos, vibrant designs, or video to the application. The video scribe application helps teachers to produce good learning videos according to students' needs. The advantages of the video scribe are that illustrators present work in videos, interesting learning resources, and stimulate students' curiosity in using technology (Setiyowati, 2019). The video scribe-based learning video may be used to assist students who have difficulty in autonomously learning (Febriani, 2017; Purwanti, 2015; Sudiarta & Sandra, 2016). It can be concluded that the use of video scribe-based learning media can stimulate students' interest and motivation in learning to improve student learning outcomes, especially in science subjects.

The findings of related research regarding learning videos stated that learning videos could increase students' interest in learning (Andriyani & Suniasih, 2021; Kawka et al., 2021; Novita, Sukmanasa, & Pratama, 2019). Other research results also indicated that learning videos could assist students with learning problems to improve their learning outcomes. (Christian & Ariani, 2018; Halim, 2017; Imamah, 2012). The weakness of previous research is that videos produced for learning purposes were less attractive as videos contained more text accompanied by audio than images and were not consistent with video development theory that many text should be avoided because it made students focusless since it simultaneously contained two visual elements: texts and video. In addition, there is no study on the development of learning videos about Animals' Movement Organs to improve students'

understanding in learning. The advantage of the learning videos developed is that it can attract students' interest in learning. Furthermore, the movie duration is not long to keep the students' attention alert. This study aims to develop a learning video about Animals' Movement Organs to improve students' understanding in learning. It can aid teachers in teaching using this videoscribe-based learning media. Moreover, this video may make independent learning for students at home easier. This media is expected to facilitate the understanding of the material about Animals' Movement Organs to improve science learning outcomes in elementary school students.

## 2. METHOD

Development research is the type of this study. The model used in developing the learning video regarding Animals' Movement Organs uses the ADDIE model, including analysis, design, development, implementation, and evaluation (Rosmiati, 2019). The choice of model is because this model has a systemic flow and is extremely easy to grasp. Figure 1 illustrates the ADDIE research model. The subjects in this study were one subject content expert, one learning design expert, one learning media expert, one teacher for product validation tests. Observation, interviews, and questionnaires were utilized to collect data in this study. The issues confronted by teachers and students were identified via observations and interviews. The questionnaire method used included feedback and suggestions on the validity of the developed video. The instrument used in collecting research data was a questionnaire. The following table presents the grid of data collection instruments to assess the validity of the developed learning video. Instrument grid for the material expert test show in tabel 1, 2, and 3



Figure 1. the ADDIE research model

Table 1. Instrument Grid for the Material Expert Test

No	Aspect	Indicator
1.	The structure of the material presented is right	1. The conformity of indicators with basic competencies 2. The suitability of the material presented with indicators
2.	The accuracy of the material in it	1. The accuracy of the material delivered 2. The novelty 3. The accuracy of material presented based on existing facts
3.	Grammar	1. The accuracy of the grammar used 2. The accuracy of the spelling on the material 3. The accuracy of writing terms on the material
4.	Punctuation is presented correctly	The accuracy of the use of punctuation in the material
5.	The difficulty level of the material is adjusted to the students' characteristics	1. The extent of the material according to the students' characteristics 2. Initial material is related to students' prior knowledge 3. The depth of material presented 4. Illustrations (examples) in the learning video are able to clarify the material presented

Table 2. . Instrument Grid for the Learning Media Expert Test

No	Aspect	Indicator
1.	The visual quality	1. The attractiveness of the cover or thumbnail of the video shown 2. The attractiveness of the graphics displayed 3. The suitability of cover visualization to the content in the media

No	Aspect	Indicator
2	The voice clarity a. Naration b. Sound Effect c. Music	4. The attractiveness of the animation or image shown
		1. The narrator's voice clarity
		2. The compatibility with sound effects
2.	The camera angle capture with image composition	3. The background music does not interfere with the learning video
		The accuracy of the point of view on the video
3.	The video presentation suitability	1. The video is in accordance with the characteristics of students
		2. The suitability of the video with the purpose of learning
		3. The ideal duration with goals
4.	The creativity in pouring ideas	1. The attractiveness of creativity in delivering messages
		2. The flexibility in terms of providing time, place, students and teaching materials

**Table 3.** Trial Instrument Grid for the Teacher

No	Aspect	Indicator
1.	Attract students	1. The attractiveness of packaging (cover or thumbnail)
		2. The attractiveness of the learning video display
		3. The attractiveness of the displayed image
		4. The clarity and attractiveness of colors presented
2.	Material presentation	1. The material presented is clear
		2. The material presented is easy to understand
		3. The examples given in the material are easy to understand
3.	Increase students' attention	The learning video can increase students' attention
4.	Motivate	1. The larning video can motivate learning 2. Letters can be read clearly
5	The voice clarity	1. Clarity of the narrator's voice
		2. The music background does not interfere with the narrator's voice

An instrument can be considered legitimate if it meets the validity criteria. The designed instrument will be evaluated for the validity test by several experts (judges). The validity test of the instrument was using the Gregory formula. The method and technique used in this research were qualitative descriptive statistics and quantitative descriptive statistics. The analysis of qualitative descriptive statistics was used to process the result of reviews and suggestions from experts. Meanwhile, the analysis of quantitative descriptive statistics was used to process data in the form of numbers obtained from the provision of assessment sheets for video scribe-based learning media instruments from learning media experts, learning design experts, and test subjects. In making decisions regarding media development, the reference in table 4.

**Table 4.** Achievement Rate Conversion with 5. Scale

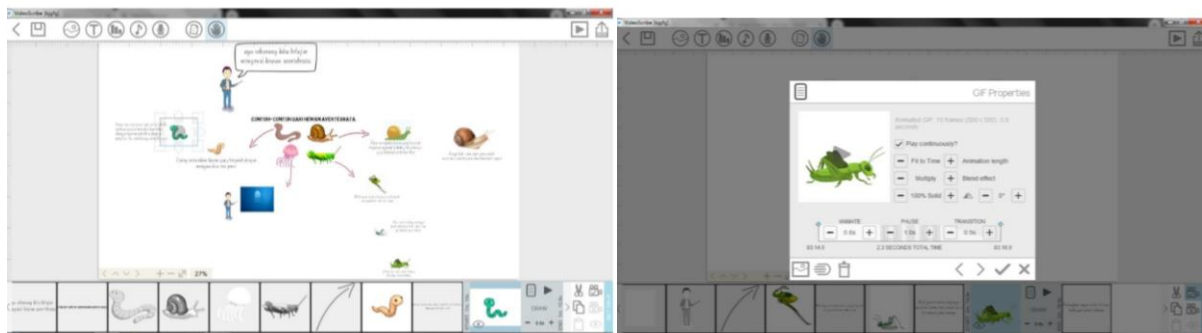
Interval	Kriteria
1,00-1,80	Very deficient
1,81-2,60	Deficient
2,61-3,40	Average
3,41-4,20	Good
4,21-5,00	Very good

### 3. RESULT AND DISCUSSION

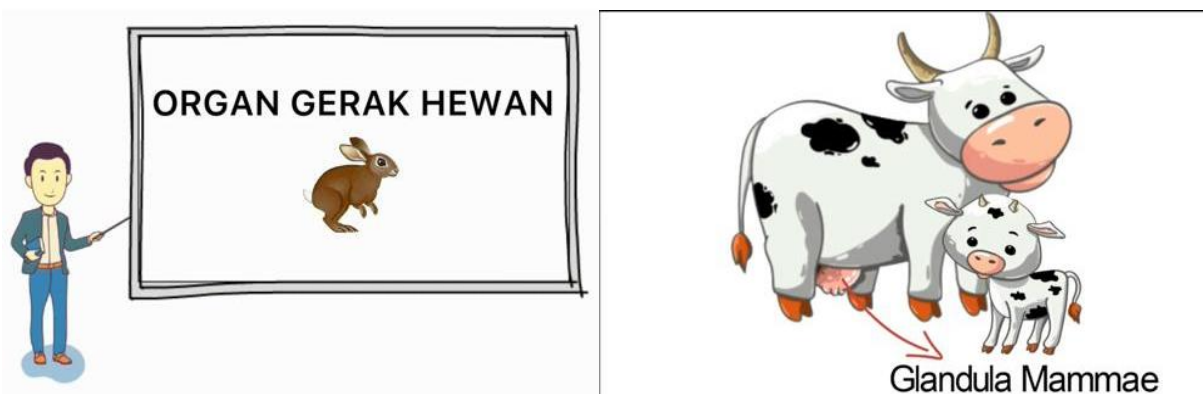
#### Result

The design of the learning video development regarding Animals' Movement Organs has been carried out using the ADDIE development model. The design of the development of this learning video begins at stages 1) Analysis 2) Design 3) Development, 4) Implementation, and 5) Evaluation. The first stage is analyzing. Four stages have been taken throughout the analysis phase, namely needs analysis, curriculum analysis, student characteristics analysis, and media analysis. The needs analysis results

indicated no particular learning videos on the science learning subject in animals' movement organs sub-theme. One of the solutions offered was to develop material for animals' movement organs in the form of a scribe-based learning video to make learning more engaging. The results of the curriculum analysis were determining core competencies, basic competencies, compiling indicators of competency achievement, learning objectives, and analyzing the material for animals' movement organs that would be used in making a scribe-based learning video. The development of this learning video was influenced by the science content material on animals' movement organs. The findings of student characteristics analysis indicated that students needed concrete objects or pictures with enticing colors to help students understand the learning material. The results of the media analysis included a video scribe-based learning video which was developed based on several criteria, including the correctness of the structure of the material presented in the video, the accuracy of the material in it, the correct grammar presentation, the correct punctuation of the presented material, and the level of the material difficulty adjusted to the students' characteristic. The second stage is designing. A design (storyboard) was developed at this stage, and a video scribe-based learning video component was designed. Figure 2 showed the design of the learning video. The third stage is developing. At this stage, the development of the video scribe-based learning video about animals' movement organs began. The development of this learning video was designed according to the previous storyboard that had been made. The results of the development of a videoribe-based learning video about animas' movement organs are presented in Figure 3.



**Figure 2.** Design of a Learning Video Regarding Animals' Movement Organs Based on Video Scribe



**Figure 3.** Learning Video Regarding Animals' Movement Organs Based on Video Scribe

After the video scribe-based learning video regarding animal movement organs, its validity will then be tested by a subject content expert, learning design expert, and learning media expert. Based on the subject content expert test's result, the video scribe-based learning video developed, which was about animal movement organs, got a score of 4.71, so that it was in very good qualifications. The results of the learning media expert test, the media developed in the form of a video scribe-based learning video about animal movement organs, got a score of 4.75, so that it was in very good qualifications. The validation test results by the teacher, the media developed in the form of a video scribe-based learning video about animal movement organs, got a value of 4.83, so that it was in very good qualifications. The suggestions given by the experts and the validation test by the teacher are presented in table 5. Based on the results of the feedback and suggestions provided by subject matter experts, learning media experts, and validation by the teacher, a product revision was conducted to perfect the development of the learning video product. The results of the revisions made are presented in Figure 4.

**Table 5.** Feedback and Suggestions from Experts and Individual Trials

No.	Video Trial Subject	Feedback and Suggestions
1.	Subject Content Expert Test	In general, the media developed is good and suitable to be used and further development on other materials. However, the speed of the narration needs to be reduced (slowed down), so that the material is easy to understand
2	Learning Media Expert Test	<ol style="list-style-type: none"> <li>1. Use the sanserif letters for the text (not sharp and curved) such as tahoma, arial, helvetic etc.</li> <li>2. Reduce the speaking speed so that the students can listen carefully.</li> <li>3. Make a summary</li> <li>4. Sort out the PARAM (Pisces, Aves, Reptiles, Amphibians and Mammals)</li> <li>5. The name of the thesis supervisor is written on the cover</li> </ol>
4.	Validation Test by Teacher	<ol style="list-style-type: none"> <li>1. Video quality is good</li> <li>2. The learning video is good and needs to be maximized</li> </ol>

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**Figure 4.** The Revision Result of the Video Scribe-Based Learning Video Regarding Animals' Movement Organs

Based on the results of the data analysis, it can be determined that the video scribe-based learning video regarding animals' movement organs has very good qualifications, therefore it is feasible to be applied in the learning process. Learning video regarding animals' movement organs based on video scribe must be developed because this media can be used by students when learning independently to more easily understand the material of Animals' Movement Organs. A video scribe-based learning video regarding animals' movement organs obtained very good qualifications and is worthy of application due to many aspects. **Firstly**, video learning about animals' movement organs based on video scribe is feasible because it can motivate students to study. The development of a video scribe-based learning video regarding animals' movement organs was very high qualified, demonstrating its attractiveness, students' interest in learning, material presentation aspect, and voice clarity in the learning video. Media that is developed creatively and in accordance with the students' characteristics and the learning material will improve students' motivation in learning, especially independent learning (Fadhli, 2015; Knoop-van Campen, Segers, & Verhoeven, 2020; Yuniarni, Sari, & Atiq, 2020). In addition, the clarity aspect of the material presented in the learning video also influences students. The notion is that an effective learning medium can channel information to encourage the students' interests, feelings and thoughts in learning. (Anggreni, Asri, & Ganing, 2017; Diyantari et al., 2020; Gunawan, Sahidu, Harjono, & Suranti, 2017; Juliawan, Agung, & Arini, 2013; Sunismi, 2015). Media is one of the factors that can increase students' motivation in learning. The reason is that the learning video can enhance the clarification of learning materials, so students' enthusiasm in learning is increasing (Rose et al., 2016; Sholikah, Kuswadi, & Sujana, 2018; Yusnia, 2019).

**Secondly**, the video scribe-based learning video about animals' movement organs is practicable since it makes it simpler for students to understand the material for animals' movement organs. The visual and images quality obtain extremely good qualifications regarding the appropriateness of the video presentation, which facilitates students' understanding of the animals' movements organ material. In addition, the material presented is in accordance with the learning objectives and contains examples to promote the clarity of the presented material (Purwanti, 2015; Sarnoko, Ruminati, & Setyosari, 2016; Utari, 2016). The learning video has the advantage of clarifying the content to absorb the video material

readily (Asnur & Ambiyar, 2018; Yuniarni et al., 2020; Yusnia, 2019). In addition, the advantages of this developed video include the use of words and images concurrently provided, animation and sound delivered jointly, a minimum text presentation, and a simple presentation of the video. Therefore, the video scribe-based learning video discussing animals' movement organs can make it easy for students to comprehend the material. **Thirdly**, the video scribe-based learning video about animals' movement organs is viable since it can add to the students' learning experience. Video media can provide students with entertaining and effective learning experiences (Silmi & Rachmadyanti, 2018; Sutrisno et al., 2013). In the video scribe application, many variations can be adjusted to suit students' needs. The video scribe-based learning video about animals' movement organs can make learning more entertaining, encourage students' abilities and be meaningful to become active in participating in learning. Other research findings also state that children will enjoy learning more if media or objects help students learn (Rose et al., 2016; Wuryanti, 2016). Furthermore, the learning experience that children get is that students begin to use technology for learning. The video scribe-based learning video about animal movement organs provides a fun learning experience for students.

The findings of previous research regarding learning videos stated that videos could increase students' motivation in learning (Christian & Ariani, 2018; Halim, 2017; Imamah, 2012). Other research findings also state that learning videos can facilitate students to absorb information and create a fun learning experience (Kawka et al., 2021; Novita et al., 2019). It can be concluded that well-packaged learning video media can help students learn independently so that it has an effect on improving student learning outcomes. The implication of this research is that the video scribe-based learning video about animals' movement organs can be used by teachers in the learning process on animals' movement organs. Video scribe-based learning video on the sub-theme of animals' movement organs provides an intriguing impression to students, creating pleasant learning. This learning video can facilitate students in learning independently so that learning objectives can be achieved maximally.

#### 4. CONCLUSION

Based on the results of data analysis, it can be concluded that the Videoscribe-based media developed as a learning video on animals' movement organs is feasible to be applied in the learning process because it can facilitate students in understanding science subject matter particularly on the energy sources topic. Elementary school students in independent learning can also use the learning video to improve science learning outcomes.

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