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

I Kadek Sukadana*, I Gusti Ngehur Japa²
²² Universitas Pendidikan Ganesha, Singaraja, Indonesia

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, Kusmiaryatni, & 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; Pertwi, 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 & Suniash, 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 monotonous 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 not capable of producing learning media. The absence of teacher creativity in creating appealing learning media promotes ineffective 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; Jogeza 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; Norozi & 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 one’s needs in the video scribe program. The video scribe application may be made online 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 (Febrian, 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](image)

**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 |
The attractiveness of the animation or image shown  
The voice clarity  
1. The narrator's voice clarity  
2. The compatibility with sound effects  
Sound Effect  
3. The background music does not interfere with the learning video  
Music  
2. The camera angle capture with image composition  
The accuracy of the point of view on the video  
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  
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

| 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 learning 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    |

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 learning 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 videocrine-based learning video about animals' movement organs are presented in Figure 3.

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 | 1. Use the sanserif letters for the text (not sharp and curved) such as tahoma, arial, helvetic etc.  
2. Reduce the speaking speed so that the students can listen carefully.  
3. Make a summary  
4. Sort out the PARAM (Pisces, Aves, Reptiles, Amphibians and Mammals)  
5. The name of the thesis supervisor is written on the cover |
| 4.  | Validation Test by Teacher | 1. Video quality is good  
2. The learning video is good and needs to be maximized |

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. has 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 (Fadhl, 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, & Gaming, 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, Ruminiati, & 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 Video scribe-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.

5. REFERENCES

Andriyani, N. L., & Suniasih, N. W. (2021). Development Of Learning Videos Based On Problem-Solving Characteristics Of Animals And Their Habitats Contain in Science Subjects On 6th-Grade. *Journal of Education, 5*(1), 37–47. https://doi.org/http://dx.doi.org/10.23887/jet.v5i1.32314.

Anggreni, P. F., Asri, I. A. S., & Ganing, N. N. (2017). Pengaruh Model Pembelajaran Kooperatif Tipe Think-Pair-Share ( Tps ) Berbantuan Media Kartu Bergambar Terhadap Penguasaan Kompetensi Pengetahuan Ips Siswa Kelas V Gusug Letkol Wisnu. * Mimbar PGSD, 5*(2), 1–10. https://doi.org/http://dx.doi.org/10.23887/jpgsd.v5i2.10645.

Anika, & Fajar. (2020). Efektivitas Model Pembelajaran Kooperatif Tipe Make-A Match Dalam Meningkatkan Kompetensi Sikap Siswa dan Kompetensi Pengetahuan Siswa Pada Pelajaran IPS. *Jurnal Ilmiah Sekolah Dasar*, 4*(1), 80–85. https://doi.org/http://dx.doi.org/10.23887/jisd.v4i1.24047.

Asnur, & Ambiyar. (2018). Penerapan Pembelajaran Menggunakan Media Video Pada Mata Kuliah Tata Boga II. *Journal Mimbar Ulu*, 23*(3). https://doi.org/http://dx.doi.org/10.23887/miv23i3.16435.

Ayuni, I. A. S., Kusniariyati, N., & Japa, I. G. N. (2017). Pengaruh Model Pembelajaran Talking Stick Berbantuan Media Question Box Terhadap Hasil Belajar IPA Kelas V. *Journal of Education Technology, 3*(1). https://doi.org/http://dx.doi.org/10.23887/jet.v13i1.12503.

Boyd, L. (2019). Using Technology-Enabled Learning Networks to Drive Module Improvements in the UK OpenUniversity. *Journal of Interactive Media in Education, 2019*(1), 1–7. https://doi.org/http://dx.doi.org/10.5334/jime.529.

Christian, & Ariani, F. (2018). Rancang Bangun Sistem Informasi Peminjaman Perangkat Demi Video Conference Berbasis Web Dengan Metode Waterfall. *Jurnal Pilar Nusa Mandiri*, 15*(1), 131–136. https://doi.org/http://dx.doi.org/10.33480/pilar.v14i1.100.

Darmadi. (2015). Peran, Kompetensi, Dan Tanggung Jawab Menjadi Guru Profesional. *Jurnal Pendidikan*, 13*(1), 161–174. https://doi.org/http://dx.doi.org/10.31571/edukasi.v13i2.113.
Dewi, N. N. K., Kristiantari, M., & Ganing, N. N. (2019). Pengaruh Model Pembelajaran Picture And Picture Berbantuan Media Visual Terhadap Keterampilan Menulis Bahasa Indonesia. *Journal of Education Technology*, 3(4). https://doi.org/http://dx.doi.org/10.23887/jet.v3i4.22364

Diyantari, I. A. K. D., Wiyasa, N., & Manuaba, S. (2020). Model Snowball Throwing Berbantuan Media Pop Up Book Berpengaruh Terhadap Kompetensi Pengetahuan IPA. *Jurnal Ilmiah Pendidikan Profesi Guru*, 3(1), 9–21. https://doi.org/http://dx.doi.org/10.23887/jippg.v3i1.26973

Fadhli, M. (2015). Pengembangan Media Pembelajaran Berbasis Video Kelas IV Sekolah Dasar. *Jurnal Dimensi Pendidikan Dan Pembelajaran*, 3(1), 24–29. https://doi.org/https://doi.org/10.24269/dpp.v3i1.157

Fadillah, A., & Bilda, W. (2019). Pengembangan Video Pembelajaran Berbantuan Aplikasi Sparkolle Videoscribe. *Jurnal Gantang*, 4(2). https://doi.org/http://dx.doi.org/10.31629/jg.v4i2.1369.

Fatah, R. A., Widodo, S. T., & Rohmani, M. (2018). Pendidikan Karakter Dalam Novel Mahamirip Anak Negeri Karya Suyatna Pambungkas Tinjauan Psikologi Sastra. *Jurnal Gramatika: Jurnal Penelitian Pendidikan Bahasa Dan Sastra Indonesia*, 4(1). https://doi.org/https://doi.org/10.22202/jg.2018.v4i1.2412.

Febriani, C. (2017). Pengaruh Media Video terhadap Motivasi Belajar dan Hasil Belajar Kognitif Pembelajaran IPA Kelas V Sekolah Dasar. *Jurnal Prima Edukasia*, 5(1), 11–21. https://doi.org/https://doi.org/10.21831/jpe.v5i1.8461.

Fitri, F. (2016). Peningkatan Kemandirian Mahasiswa Pendidikan Fisika pada Mata Kuliah Mekanika Melalui Metode Reciprocal Teaching. *Jurnal Pendidikan Fisika*, 4(1). https://doi.org/https://doi.org/10.24127/jpf.v4i1.391.

Gunawan, G., Sahidu, H., Harjono, A., & Suranti, N. M. Y. (2017). The effect of project based learning with virtual media assistance on student’s creativity in physics. *Journal Cakrawala Pendidikan*, 1(2). https://doi.org/https://doi.org/10.21831/cp.v36i2.13514.

Halim, D. (2017). Pengembangan Video Pembelajaran IPA Pada Materi Pencemaran Dan Kerusakan Lingkungan. *Jurnal Pendidikan Sains Indonesia*, 5(2), 108–114. https://doi.org/https://doi.org/10.24815/jpsiv5i2.9825.

Hanifah, & Budiman. (2019). Pengaruh Model Open Ended Problem Berbantuan Media Kotak Telur Pelangi (Kotela) Terhadap Hasil Belajar. *Journal of Education Technology*, 3(3), 1–137. https://doi.org/http://dx.doi.org/10.23887/jet.v3i3.21734.

Husein, U. (2011). *Metode Penelitian Untuk Skripsi dan Tesis Bisnis Edisi 11*. Jakarta: PT Raja Grafindo Persad.

Imamah, N. (2012). Peningkatan Hasil Belajar IPA Melalui Pembelajaran Kooperatif Berbasis Konstruktivisme Dipadukan Dengan Video Animasi Materi Sistem Kehidupan Tumbuhan. *Jurnal Pendidikan IPA Indonesia*, 1(1). https://doi.org/http://dx.doi.org/10.15294/jpi.v1i1.2010.

Jahro, S., & Ridho, D. (2015). Penerapan Model Problem Based Learning Menggunakan Media Exe Learning untuk Meningkatkan Hasil Belajar dan Kerjasama Siswa Pada Materi Hidrokarbon. *Jurnal Pendidikan Kimia*, 7(3), 80–86. https://doi.org/https://doi.org/10.24114/jpkim.v7i3.4261.

Jatmiko, P. D., Wijayantin, A., & Susilaningrisi, S. (2017). Pengaruh Pemanfaatan Video Pembelajaran Terhadap Hasil Belajar IPA Kelas IV Sekolah Dasar. *Edcomtech Jurnal Kajian Teknologi Pendidikan*, 1(2), 153–156. Retrieved from http://journal2.um.ac.id/index.php/edcomtech/article/view/1803.

Jogeza, N. A., Baloch, F. A., Jaffar, M., Shah, T., Khilji, G. K., & Bashir, S. (2021). Teachers’ Attitudes Towards Social Media (SM) Use in Online Learning Amid The COVID-19 Pandemic: The Effects of SM Use by Teachers and Religious Scholars During Physical Distancing. *Journal Helyon*, 7(4), 1–9. https://doi.org/10.1016/j.jhelyon.2021.e06781.

Juliawan, K. E., Agung, A. A. G., & Arini, N. W. (2013). Pengaruh Pendekatan Savi Berbantuan Media Visual Terhadap Hasil Belajar IPA Siswa Kelas IV DI SD No 1 Sepang Kediri. *Mimbar PGSD Undiksha*, 1(1). https://doi.org/http://dx.doi.org/10.23887/jppgsd.v1i1.783.

Juniani, J., & Widiana. (2017). Penerapan Model Pembelajaran Inkuiri Untuk Meningkatkan Hasil Belajar IPA. *Jurnal Ilmiah Sekolah Dasar*, 1, 20–19. https://doi.org/http://dx.doi.org/10.23887/jis.v1i1.10126.

Kawka, M., MH.Gall, T., Fang, C., Liu, R., & Jiao, R. (2021). Intraoperative video analysis and machine learning models will change the future of surgical training. *Intelligent Surgery*, 1(1). https://doi.org/https://doi.org/10.1016/j.jsurg.2021.03.001.

Khan, F. M. A., & Masood, M. (2015). The Effectiveness of an Interactive Multimedia Courseware with Cooperative Mastery Approach in Enhancing Higher Order Thinking Skills in Learning Cellular Respiration. *Procedia - Social and Behavioral Sciences*, 176, 977–984. https://doi.org/10.1016/j.sbspro.2015.01.567.
Khofiyah, H. N., Santoso, A., & Akbar, S. (2019). Pengaruh Model Discovery Learning Berbantuan Media Benda Nyata terhadap Kemampuan Berpikir Kritis dan Pemahaman Konsep IPA. *Jurnal Pendidikan: Teori, Penelitian, Dan Pengembangan*, 4(1), 61–67. https://doi.org/10.17977/jptpp.v4i1.11857.

Knoop-van Campen, C. A. N., Segers, E., & Verhoeven, L. (2020). Effects of audio support on multimedia learning processes and outcomes in students with dyslexia. *Computers and Education*, 150(Febuary), 103858. https://doi.org/10.1016/j.compedu.2020.103858.

Lattu, D. (2012). Peran Guru Bimbingan dan Konseling pada Sekolah Penyelenggara Pendidikan Inklusi. *Jurnal Bimbingan Dan Konseling Terapan*, 2(1). https://doi.org/10.30598/jbkt.v2i1.236.

Mediatati, N., & Suryaningsih, I. (2017). Penggunaan Model Pembelajaran Course Review Horay Dengan Media Flipchart Sebagai Upaya Meningkatkan Hasil Belajar PKn. *Jurnal Ilmiah Sekolah Dasar*, 1(2). https://doi.org/10.23887/jisd.v1i2.10146.

Muskania, R. T., Badariah, S., & Mansur, M. (2019). Pembelajaran Tematik Menggunakan Media Video Scribe Pada Siswa Kelas IV Sekolah Dasar. *Elementary: Islamic Teacher Journal*, 7(1). https://doi.org/10.12043/elementary.v7i1.4927.

Neppala, P., Sherer, M. V., Larson, G., Bryant, A. K., Panjwani, N., Murphy, J. D., & Gillespie, E. F. (2018). An Interactive Contouring Module Improves Engagement and Interest in Radiation Oncology Among Preclinical Medical Students: Results of a Randomized Trial. *Practical Radiation Oncology*, 8(4), e190–e198. https://doi.org/10.1016/j.prro.2018.01.001.

Noroozi, O., & Mulder, M. (2017). Design and Evaluation of a Digital Module with Guided Peer Feedback for Student Learning Biotechnology and Molecular LifeSciences, Attitudinal Change, and Satisfaction. *Biochemistry and Molecular Biology Education*, 45(1), 31–39. https://doi.org/10.1002/bmb.20981.

Novita, L., Sukmanesa, E., & Pratama, M. Y. (2019). *Indonesian Journal of Primary Education Penggunaan Media Pembelajaran Video terhadap Hasil Belajar Siswa SD*. 3(2), 64–72.

Pertiwi, I. N., Sumarno, & Dwi, A. (2019). Pengaruh Model Make A Match Berbantuan Media Kartu Bergambar terhadap Kemampuan Membaca dan Menulis. *MIMBAR PGSD Undiksha*, 7(3), 261–270. https://doi.org/10.23887/jppgsd.v7i3.19412.

Prabaningrum, & Putra. (2019). Pengaruh Model Pembelajaran Kooperatif Team Assisted Individualization Berbantuan Media Semi Konkrit Terhadap Kompetensi Pengetahuan Matematika. *Jurnal Ilmiah Sekolah Dasar*, 3(4), 414. https://doi.org/10.23887/jisd.v3i4.21775.

Purwanti, B. (2015). Pengembangan Media Video Pembelajaran Matematika dengan Model Assure. *Jurnal Kebijakan Dan Pengembangan Pendidikan*, 3(1), 42–47. https://doi.org/10.22219/jkpp.v3i1.2194.

Putra, I. G. D., & Sujana. (2020). Hasil belajar IPS menggunakan Kolaborasi Model Discovery Learning Berbasis Media Animasi. *Journal of Educational Technology*, 4(1), 103–109. https://doi.org/10.23887/jet.v4i1.25099.

Qazi, A., Qazi, J., Naseer, K., Zeeshan, M., Qazi, S., Abayomi-ally, O., … Haruna, K. (2021). Adaption of Distance Learning to Continue the Academic Year Amid COVID-19 Lockdown. *Journal Pre-Proofs (Children and Youth Services Review)*, 1–20. https://doi.org/10.1016/j.childyouth.2021.106038.

Rahmatika, & Ratnasari. (2018). Media Pembelajaran Matematika Bilingual Al Berbasis Sparkol Videocribe. *Desimal: Jurnal Matematika*, 1(3), 385–393. https://doi.org/10.24042/djm.v1i3.3061.

Rose, J. A., O’Meara, J. M., Gerhardt, T. C., & Williams, M. (2016). Gamification: using elements of video games to improve engagement in an undergraduate physics class. *Physics Education*, 51(5). https://doi.org/10.1088/0031-9120/51/5/055007.

Rosmiati, M. (2019). Animasi Interaktif Sebagai Media Pembelajaran Bahasa Inggris Menggunakan Metode ADDIE. *Paradigma: Jurnal Komputer Dan Informatika Universitas Bina Sarana Informatika*, 21(2). https://doi.org/10.31294/p.v21i2.6019.

Saiboon, I. M., MSurg, Nurmainun, Noriani, Shamsuddin, N. S., & Johar, M. (2021). Effectiveness of Self-Directed Small-Group-Learning Against Self-Directed Individual-Learning Using Self-Instructional-Video in Performing Critical Emergency Procedures Among Medical Students in Malaysia: A Single-Blinded Randomized Controlled Study. *Clinical Simulation in Nursing*, 56(1). https://doi.org/10.1016/j.ecns.2021.02.006.

Sarnoko, Ruminati, & Setyosari, P. (2016). Penerapan Pendekatan Savi berbantuan Video Pembelajaran untuk Meningkatkan Aktivitas dan Hasil Belajar IPS Siswa Kelas IV SDN 1 Sanan Girimarto Wonogiri. *Jurnal Pendidikan*, 7(1). https://doi.org/10.17977/jp.v1i7.6524.
Setiyowati, P. (2019). Pengaruh model pembelajaran discovery learning menggunakan video scribe sparkol terhadap hasil belajar SMK Pervari Tulungagung kelas X tahun ajaran 2017/2018. JOEICT (Journal of Education and Information Communication Technology), 3(1). https://doi.org/10.29100/joeictv3i1.694.

Sholikh, M. M., Kuswadi, K., & Sujana, Y. (2018). Penggunaan Video Pembelajaran Untuk Meningkatkan Pengetahuan Seksualitas Pada Anak Kelompok B2 Tk Islam Permata Hati Makam Haji Kabupaten Sukoharjo Tahun Ajaran 2015/2016. Jurnal Kumara, 6(3). https://doi.org/10.20961/kkc.v6i3.35134.

Silmi, M., & Rachmadiyanti, P. (2018). Pengembangan Media Pembelajaran Video Animasi Berbasis Sparkol Videocodec Tentang Persiapan Kemerdekaan RI SD Klas V. Jpsgd, 6(4). Retrieved from https://jurnalmahasiswa.unesa.ac.id/index.php/jurnal-penelitian-psgd/article/view/23611.

Suantara, I. K. T., Ganing, N. N., Agung, I. G., & Wulandari, A. (2019). Pengaruh Model Pembelajaran Think Pair Share Berbantuan Media TTS terhadap Kompetensi Pengetahuan IPA. Jurnal Ilmiah Sekolah Dasar, 3(4), 473–480. https://doi.org/http://dx.doi.org/10.23887/jisd.v3i4.21783.

Sudiarta, I. G. P., & Sandra, I. (2016). Pengaruh Model Blended Learning berbantuan Video Animasi Terhadap Kemampuan Pemecahan Masalah dan Pemahaman Konsep Siswa. Jurnal Pendidikan Dan Pengajaran, 49(2). https://doi.org/http://dx.doi.org/10.23887/jppundiksha.v49i2.9009.

Sukmanasa, Windiyani, & Novita. (2017). Pengembangan Media Pembelajaran Komik Digital Pada Mata Pelajaran Ilmu Pengetahuan Sosial Bagi Siswa Kelas V Sekolah Dasar Di Kota Bogor. Jurnal Pendidikan Sekolah Dasar, 3(2). https://doi.org/https://doi.org/10.30870/jpsd.v3i2.2138.

Sunismi. (2015). Developing Guided Discovery Learning Materials Using Mathematics Mobile Learning Application As An Alternative Media For The Students Calculus II. Cakrawala Pendidikan, 34(5). https://doi.org/https://doi.org/10.21831/cp.v3i5.7340.

Sutrisno, T., Agung, Y. A., Tri Sutrisno, & Yudha Anggana Agung. (2013). Pengembangan Media Videocodec Berbasis E-Learning Pada Mata Pelajaran Komunikasi Data dan Interface Di SMK Sunan Drajjat Lamongan. Jurnal Pendidikan Teknik Elektro, 05(03), 1068–1074. Retrieved from https://jurnalmahasiswa.unesa.ac.id/index.php/jurnal-pendidikan-teknik-elektro/article/view/17213.

Tegeh, Simamora, & Dwipayana. (2019). Pengembangan Media Video Pembelajaran Dengan Model Pengembangan 4D Pada Mata Pelajaran Agama Hindu. Jurnal Mimbar Ilmu, 24(2), 158–166. https://doi.org/https://doi.org/10.23887/mi.v24i2.21262.

Utari, R. (2016). Kontribusi Motivasi Belajar Dan Kebiasaan Belajar Siswa Kelas 1 Teknik Audio Video Terhadap Hasil Belajar Pada Mata Diklat Pkdle Di Smk N 1 Padang. Jurnal Ilmiah Pendidikan Teknik Elektro, 1(1068). Retrieved from https://doi.org/https://doi.org/10.30870/volt.v1i2.2877.

Widiarti, P. D. O., Putra, M., & Manuaba, S. (2018). Pengaruh Model Pembelajaran Group Investigation Berbasis Tri Hita Karana Terhadap Kompetensi Pengetahuan IPA. Jurnal Ilmiah Sekolah Dasar, 3(1). https://doi.org/https://doi.org/10.23870/jisd.v3i3.19476.

Widiyasanti, M., & Ayriza, Y. (2018). Pengembangan Media Video Animasi untuk Meningkatkan Motivasi Belajar dan Karakter Tanggung Jawab Siswa Kelas V. Jurnal Pendidikan Karakter, 8(1). https://doi.org/https://doi.org/10.21831/jpk.v8i1.21489.

Wuryanti. (2016). Pengembangan Media Video Animasi untuk Meningkatkan Motivasi Belajar dan Karakter Kerja Siswa Sekolah Dasar. Jurnal Pendidikan Karakter, 6(2). https://doi.org/https://doi.org/10.20961/jpk.v6i2.12055.

Yuniarni, Sari, & Atiq. (2020). Pengembangan Multimedia Interaktif Video Senam Animasi Berbasis Budaya Khas Kalimantan Barat. Jurnal Obsesi: Jurnal Pendidikan Anak Usia Dini, 4(1). https://doi.org/https://doi.org/10.3004/obsesi.v4i1.331.

Yusnia, Y. (2019). Penggunaan Media Video Scribe Dalam Pembelajaran Literasi Sains Untuk Mahasiswa PGPAUD. Cakrawala Dini: Jurnal Pendidikan Anak Usia Dini, 10(1), 71–75. https://doi.org/https://doi.org/10.17509/cd.v10i1.17436.

Za’im, M. (2016). Pendidikan Anak dalam Pengembangan Kecerdasan IQ, EQ dan SQ (Studi Kitab Tuhfat Al-Mawdud Bi Ahkam Al-Mawlud Karya Ibnu Al-Qayyim Al-Jauzyiah). Muallimuna : Jurnal Mudasarah Ibtidaiyah, 2(1). https://doi.org/https://doi.org/10.31602/muallimuna.v2i1.743.