# The Effect of Problem Based Animated Learning Video on Science Content

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**A R T I C L E   I N F O**

**A B S T R A K**

*Hasil observasi dan penelitian pendahuluan menunjukkan bahwa latar belakang beberapa permasalahan yaitu kurangnya pemanfaatan media pembelajaran yang kreatif sehingga siswa kurang aktif dan kurang berminat dalam pembelajaran sehingga kurangnya interaksi antara guru dengan siswa. Hal ini disebabkan oleh guru yang masih kurang memahami pemanfaatan teknologi dalam penyediaan media pembelajaran bagi siswa. Solusi untuk mengatasi permasalahan tersebut yaitu perlunya pemanfaatan media pembelajaran yang kreatif dan inovatif di sekolah untuk menunjang proses pembelajaran. Penelitian pengembangan ini bertujuan untuk mengembangkan video pembelajaran animasi berbasis problem based learning. Penelitian ini menggunakan model ADDIE (analyze, design, development, implementation, and evaluation). Pengumpulan data menggunakan metode angket dan tes. Subjek uji untuk penelitian ini adalah ahli isi pembelajaran, ahli desain pembelajaran, ahli media pembelajaran, tes perorangan, tes kelompok kecil dan siswa. Teknik analisis data yang digunakan dalam penelitian ini adalah teknik analisis deskriptif kualitatif, teknik analisis deskriptif kuantitatif, dan statistik inferensial uji-t. Penelitian pengembangan ini meliputi hasil: (1) desain dan pengembangan video pembelajaran yaitu tahapan analisis, desain, pengembangan, implementasi dan evaluasi; (2) hasil uji coba produk yaitu: Penilaian dari ahli desain pembelajaran yaitu 95% (sangat baik), hasil uji coba perorangan yaitu 87,2% (sangat baik) dan hasil uji coba kelompok kecil yaitu 80% (sangat baik); (3) video pembelajaran animasi efektif digunakan untuk meningkatkan hasil belajar.*

**A B S T R A C T**

The results of observations and preliminary research show that the background to several problems is the lack of use of creative learning media so that students are less active and less interested in learning so there is a lack of interaction between teachers and students. This is caused by teachers who still do not understand the use of technology in providing learning media for students. The solution to overcome this problem is the need to use creative and innovative learning media in schools to support the learning process. This development research aims to develop animated learning videos based on problem based learning. This research uses the ADDIE (analyze, design, development, implementation, and evaluation) model. Data collection used questionnaire and test methods. The test subjects for this research were learning content experts, learning design experts, learning media experts, individual tests, small group tests and students. The data analysis techniques used in this research are qualitative descriptive analysis techniques, quantitative descriptive analysis techniques, and t-test inferential statistics. This development research includes the results of: (1) design and development of learning videos, namely the stages of analysis, design, development, implementation and evaluation; (2) product trial results, namely: Assessment from learning design experts, namely 95% (very good), individual trial results, namely 87.2% (very good) and small group trial results, namely 80% (very good); (3) animated learning videos are effectively used to improve learning outcomes.

## 1. INTRODUCTION

Online learning is basically done virtually using the internet and virtual applications available as a place to channel knowledge. Since March 2021, online learning has become the only option that can be implemented due to the Covid-19 pandemic (Permana P & Manurung, 2020; Puspitasari, 2020). Online learning can be identified as a learning process in an synchronous and asynchronous environment using different devices such as laptops, cellphones, and so on with internet access (Nana, 2020; Scull et al., 2020). This causes the learning process to be carried out in their respective homes and causes teachers to be required to change the learning methods used and also have to familiarize themselves with using technology. This is certainly not easy to do, because teachers have different abilities in learning technology (Fatimah & Santiana, 2017; Susilowati & Suyatno, 2021). Teachers who have a younger age will be easier to learn technology, in contrast to teachers who are old enough. For teachers who are old enough, it will be more difficult to understand technological developments due to the decline in cognitive function which is the ability to recognize and interpret a person's environment in the form of attention, language, memory, and deciding functions (Lampropoulos et al., 2019; Rafianti et al., 2018). So it is difficult for

older teachers to be creative in using technology to be used in learning activities. Innovative learning can be achieved in various ways, such as using different learning methods or using tools to carry out the teaching and learning process. The tools in question are learning media, according to their function, using learning media when learning can increase student motivation so that it can increase learning motivation and the meaning of teaching materials will be clearer, so that students can understand it better, and enable students to master learning objectives well (Nasution ) (Gopinathan et al., 2022; Nieto-Escamez & Roldán-Tapia, 2021). Because currently education cannot be separated from technology, the learning media used will be predominantly technology-based. In this regard, not all teachers are able to utilize technology properly to be used in creating learning media (Dewantara et al., 2022; Werdiningsih et al., 2019).

Based on the results of observations and interviews conducted with one of the teachers at State Elementary School 2 Sumberklampok who has been teaching since 2014 or has been teaching at State Elementary School 2 Sumberklampok for 6 years. During limited face-to-face meetings, at State Elementary School 2 Sumber Grup. Face-to-face learning is carried out a full week at State Elementary School 2 Sumberklampok but is divided into 2 shifts. The learning types of students at State Elementary School 2 Sumberklampok also vary, some are diligent and quick to grasp learning, and there are also those who are slow in understanding learning. It is known that learning carried out during the pandemic was only via WA and Google forms, while face-to-face learning used lecture methods and assignments. He only uses concrete objects as media, while digital learning media is rarely used. Learning that lacks variety can cause boredom in students when studying. Based on observations carried out, it is known that the class IV study room is equipped with a projector and I Ketut Agus Budi Artana has also used it to deliver material on certain subject content only. Based on the results of document recording, the number of class IV students is 22 people. In the science learning content in Theme 7, sub-theme 2 Learning 2, as many as 16 students (72.72%) out of 22 students still had a score of 75 or below, so they did not meet the National Minimum Completeness Criteria (KKM), namely 75.

According to previous study learning media which are classified according to their nature are divided into three, namely 1). auditive media (media that can be heard only); 2). Visual media (media that can only be seen) and; 3). Audiovisual media (media that contains sound elements and image elements) (Krüger & Bodemer, 2022; Sulasmi, 2022). Currently, audio visual media is increasingly being used for learning activities, one of which is animated videos. Animated learning video media has several advantages so it is often chosen to be used as learning media. One of the advantages of learning video media is that it can present moving images to students, in addition to the sound that accompanies them, so that students feel like they are in the same place as the program shown in the video (Wuryanti & Kartowagiran, 2016; Yusup et al., 2016). Thus, one effort to overcome non-varied learning at State Elementary School 2 Sumber Kelampok is to use interactive learning media that is able to attract students' attention and focus in learning. Problem-Based Learning (PBL) is a student-centered learning method where students are presented with real-world problems to solve (Misla & Mawardi, 2020; Simamora et al., 2017). The goal of PBL is to develop critical thinking, analytical skills, collaboration, and problem-solving abilities. In this method, students are encouraged to be independent in exploring and finding solutions to the problems presented, while the teacher acts as a facilitator guiding their thought processes (Cahyo, 2016; Lusiana et al., 2022). PBL provides students with the opportunity to actively engage in the learning process and develop skills that are relevant to real life. On the other hand, the use of animated video as a learning medium offers visual and interactive advantages that can explain abstract or difficult concepts in a more engaging and easily understandable way. Animated videos provide a rich visual experience and can simulate real-world situations or theoretical concepts dynamically. When used in PBL, animated videos can provide clear context for the problems students are tasked with solving, allowing them to understand the issues more deeply and visually (Rahmawati et al., 2021; Reilly et al., 2019). This is particularly beneficial in PBL, where a comprehensive understanding of the problem is key to finding the right solution.

In addition, animated videos can enhance student engagement in the learning process. By presenting captivating visuals and structured storylines, animated videos are able to maintain students' attention and facilitate their understanding of the steps involved in problem-solving (Eleaser et al., 2023; Soeoed et al., 2018). Animated videos also allow for the gradual explanation of complex issues, enabling students to analyze each element of the problem systematically. For example, in science learning, animated videos can demonstrate scientific processes that are difficult to observe directly, such as chemical reactions or natural phenomena, which can then serve as the basis for students to solve the presented problems (Eleaser et al., 2023; Trabelsi et al., 2022).

The integration of PBL and animated videos also fosters student collaboration. When students work in groups to solve problems presented through animated videos, they can discuss, exchange ideas, and divide tasks according to their individual strengths (Adifta et al., 2022; Monica et al., 2019). This creates a collaborative learning environment where students not only learn from the problems presented but also from their interactions with peers. In this context, animated videos serve as a starting point for discussions and problem-solving, providing students with a visual framework and context they can refer to throughout the learning process.

The aim of this research is to develop problem bassed learning video on science material theme 7 sub theme 1 learning 1 class IV at State Elementary School 2 Sumberklampok. This study also find out the validity of the problem bassed learning video on science material theme 7 sub theme 1 learning 1 class IV at state elementary school 2 Sumberklampok and the effectiveness of using problem based learning videos on science material theme 7 sub theme 1 learning 1 class IV at State Elementary School 2 Sumberklampok. The novelty of this research lies in the unique integration of Problem-Based Learning (PBL) with animated video as an innovative learning medium.

## 2. METHOD

The research model applied in this development research is the ADDIE model and its development procedures, namely: (1) analysis, (2) design, (3) development, (4) implementation (implementation) , and (5) evaluation (Branch, 2009). To determine the quality of learning animation video media, it can be measured by product expert testing, which includes educational technology expert testing, learning content expert testing, learning design expert testing, learning media expert testing, individual testing, and small group testing. Before testing the quality of the learning animation video media, first test the assessment instrument to measure whether the instrument is relevant or not.
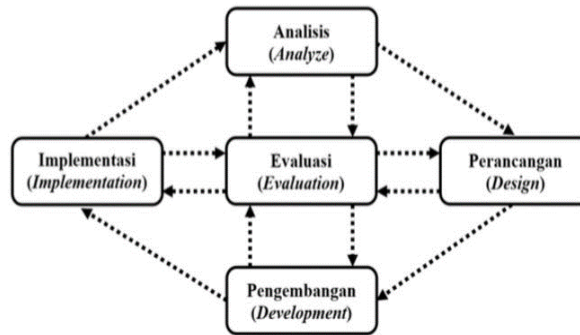


**Figure 1.** ADDIE Model

The results of this development research are: (1) design and development of learning animation videos using the ADDIE model, (2) results of the validity of learning animation video media, (3) effectiveness of using learning animation videos. The subjects of this research include learning content experts, learning design experts, learning media experts, individual trial students, and small group trial students. The method used to collect data is the questionnaire and test method. The data analysis techniques in this research are quantitative descriptive and t-test inferential statistics. The data collection instruments in this research are questionnaires and tests. The results of calculating scores from experts (learning content experts, learning design experts, learning media experts), individual trials and small group trials get very good qualifications. The next stage is carrying out product trials that have been developed using a questionnaire that has been developed. There are six components in implementing product trials that have been developed including, (1) learning content experts, (2) learning media experts, (3) learning design testing, (4) educational technology experts, (5) individual trials, and ( 6) small group trials. The six data are presented sequentially according to the results obtained as follows. Looks like this in Table 1.

**Table 1.** Product Validity Test Instrumen Grid

| No | Formative Test | Aspect | Number of Items |
|---|---|---|---|
| 1. | Validation of Learning Content Aspect | 1 Curriculum.<br>2. Method<br>3. Language<br>4. Evaluation | 17 |
| 2. | Validation of Learning Design Aspects | 1. View<br>2. Material<br>3. Strategy<br>4. Evaluation | 15 |
| 3. | Media Aspect Validation | 1. Text<br>2. Fig<br>3. Animation<br>4. Audio | 16 |

| No | Formative Test | Aspect | Number of Items |
|---|---|---|---|
|  |  | 5. Packaging |  |
|  |  | 6. Accessibilty |  |

The descriptive statistical analysis of the data obtained using the questionnaire approach is then performed. The rules for the scoring criteria shown in Table 2.

**Table 2.** Scoring Criteria Guidelines

| No | Percentage Rate | Qualification | Informationa |
|---|---|---|---|
| 1 | 81-100 | Very Well | Verry decent, no need to repair |
| 2 | 61-80 | Good | Decent, no need to repair |
| 3 | 41-60 | Enough | Not feasible, needs to be repaid |
| 4 | 21-40 | Less | Not feasible, needs to be repaid |
| 5 | <21 | Less than once | Very unfit, needs to be repaid |

## 3. RESULT AND DISCUSSION

**Result**

This development research was carried out at SD Negeri 1 Selat with the target of class V in the even semester of the 2022/2023 academic year. This development was carried out using the ADDIE development model, which includes several stages, namely. 1) analysis, 2) design, 3) development, 4) implementation and 5) evaluation.

This needs analysis stage is carried out to identify the needs of teachers and students in schools, especially during the learning process. This needs analysis uses interview and observation methods. The results of interviews and observations in class IV of State Elementary School 2 SumberKlampok are important guidelines in solving problems that occur. Based on observations carried out, it is known that the class IV study room is equipped with a projector and I Ketut Agus Budi Artana has also used it to deliver material on certain subject content only. Based on the results of document recording, the number of class IV students is 22 people. In the science learning content in Theme 7, sub-theme 2 Learning 2, as many as 16 students (72.72%) out of 22 students still had a score of 75 or below, so they did not meet the National Minimum Completeness Criteria (KKM), namely 75. Thus, it is necessary to develop media Effective learning is used in the learning process, such as learning media in the form of learning videos on science subjects.

The results of observations were carried out in class IV rooms to find out the facilities and infrastructure that the class and school had to support the learning process. State Elementary School 2 SymberKlampok has LCD projectors in several classes including class IV and there are external speakers that can be used interchangeably. LCD projectors and external speakers in science learning can make it easier for teachers to explain learning material, but the facilities and infrastructure they have are not fully used in the learning process, this causes the teacher's learning method to be monotonous with the lecture method, thus affecting students in the process. learning or lack of motivation in learning and students' attention in learning becomes unfocused. Based on observations that have been made, the development of learning animation videos utilizing an LCD projector and external speakers in their use, this can simplify the learning process and help students understand the material being taught more clearly. After conducting a needs analysis, the researcher then began to determine the KD and Indicators in the science lesson content as follows Table 3.

**Table 3.** Basic Competencies and Indicators of Science Lesson Content

| Subjects | Learning objectives | Flow of learning objectives | Scope of material |
|---|---|---|---|
| Sains | Utilizing the phenomena of magnetism in everyday life, demonstrating various types of force and their influence on the direction, motion and shape of objects. | Topic A: 1. Students understand the basic concept of force and its effect on objects. 2. Students understand the concept of friction and its benefits in everyday life. | Utilization of magnetic phenomena in everyday life. Demonstration of various types of forces and their effects on the direction, motion, and shape of objects |

The product is developed according to the design that has been created on the video storyboard. This stage produces a product in the form of a learning animation video. This product development uses several supporting applications such as: Adobe After Effect (Ae), Adobe Illustrator (Ai), Adobe Premiere Pro CC 2020 (Pr). In the initial display section of this learning animation video, the title and sub-themes are displayed, so that

students know the general content of the learning video. In this section, the learning objectives achieved after watching the lesson are displayed, so that students can focus on the learning material, and The learning objectives achieved after watching the lesson are also displayed, so that students can focus on the learning material. The following is a display of the learning objectives of the learning animation video. In the material section, the material is displayed in detail in language that is easy to understand and easy to understand, so that students can understand the material quickly and illustrations/examples are provided in the presentation of the material which makes students quickly understand the basic concepts. material, the evaluation section is created with the aim of evaluating students' ability to understand the material that has been explained in the animated learning video media. The image can be seen at Figure 2.
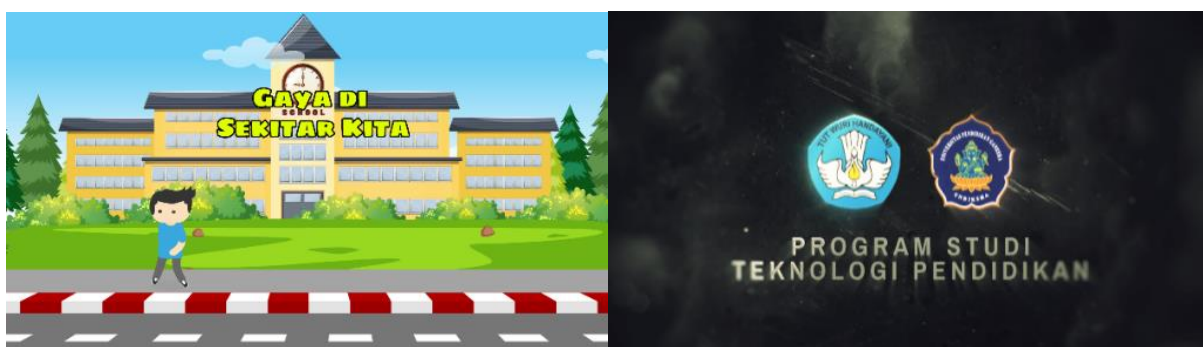


**Figure 2.** Initial View of Learning Animation Video

The learning outcome test instrument is analyzed using (1) test item validity, (2) test reliability, (3) test difficulty level, (4) test differential power. This trial of the learning outcomes test instrument was carried out to find out whether the learning outcomes instrument was suitable for use as a research instrument. In this sub-chapter five main topics are explained, namely: (1) learning content expert test, (2) learning design expert test, (3) learning media expert test, (4) individual trial, (5) small group trial. The five data are presented sequentially according to the results obtained from each test stage. The validity results of animation video development according to learning content expert tests, learning design expert tests, learning media expert tests, individual trials and small group trials in more detail can be seen in the Table 4.

**Table 4.** Validity Result

| No | Test Subjects | Validity Results | Percentage Qualification |
|----|---------------|------------------|--------------------------|
| 1 | Learning Content Expert Test | 91% | Verry good |
| 2 | Learning Design Expert Test | 95% | Verry good |
| 3 | Learning Media Expert Test | 95% | Verry good |
| 4 | Individual Trial | 87.2% | Good |
| 5 | Small Group Trial | 80% | Good |

At this stage, the objective test instrument was tested on 30 grade 4 students at State Elementary School 2 Sumber Lampok, to determine the validity of the instrument that had been created. The results of the validity of the instruments that have been carried out show that of the 25 multiple choice questions tested, there are 20 valid questions and 5 invalid questions. Instrument test reliability is used to find out whether the related instrument obtains consistent results. The data used for this reliability test is data that has been said to be valid when testing the validity of the test items. Based on the results of the calculations carried out, it can be concluded that the instrument has a reliability r1.1 of 0.736. If these results are converted into a table of degrees of test reliability proposed by Guilford, they are included in the high qualifications. At this stage, it is known that the instrument has easy, medium and difficult levels of difficulty. Based on the test results on the level of difficulty, 11 questions have an easy level of difficulty, 11 questions have a medium level of difficulty and 3 questions have a difficult level of difficulty. Based on the calculation of the difficulty level for the test device with one of the questions, it was obtained at 0.59. If we look at the level of difficulty of the test, this question is included in the medium criteria. The test's differential power is the ability of each question item to vary between respondents who have less mastery of the material and respondents who have more mastery of the material. Based on the results of calculations, the difference power of the test device was obtained at 0.22. When compared with the test difference power criteria, the test equipment's difference power is considered to be quite good.

The data normality test is carried out to ensure that the sample really comes from a normally distributed population. The data normality test was carried out on 30 students in class IV obtained from two stages, namely:

(1) pretest (learning results of students who took part in learning without using problem based learning oriented animated learning videos), and (2) posttest (learning results of students who following lessons using animated learning videos oriented to problem based learning). The technique used to test data normality is Shapiro Wilk with the help of SPSS. The basis for decision making is according to Shapiro Wilk's basic criteria concept, if the significant value is > 0.05, then the research data is normally distributed, and if the significant value is > 0.05, then the research data is not normally distributed. Table 5 is presented to test the normality of students' pretest results and posttest results.

**Table 5.** Test of Normality

| | Tests of Normality | | | | | |
| | Kolmogorov-Smirnov[a] | | | Shapiro-Wilk | | |
| | Statistic | df | Sig. | Statistic | df | Sig. |
|---|---|---|---|---|---|---|
| Pretest | 0.155 | 30 | 0.065 | 0.924 | 30 | 0.033 |
| Postest | 0.244 | 30 | 0.000 | 0.915 | 30 | 0.020 |

a. Lilliefors Significance Correction

Base on Table 5, the noermality test is show the data is normal. The data homogeneity test is carried out to find out whether two or more groups of data come from the same two variations as show in Table 6.

**Table 6.** Homogenity Result

| | Test of Homogeneity of Variances | | | | |
| | | Levene Statistic | df1 | df2 | Sig. |
|---|---|---|---|---|---|
| Result | Based on Mean | 0.368 | 1 | 58 | 0.546 |
| | Based on Median | 0.841 | 1 | 58 | 0.363 |
| | Based on Median and with adjusted df | 0.841 | 1 | 57.95 | 0.363 |
| | Based on trimmed mean | 0.367 | 1 | 58 | 0.547 |

Based on Table 6 show the results of homogeneity test calculations using SPSS in the table above, the significant results obtained were 0.564, which means more than 0.05, so the sample can be said to have a homogeneous distribution. Based on the data in the table, the results of the normality test calculation using Shapiro Wilk SPSS obtained from the pretest and posttest results are 0.033 and 0.20, which means > 0.05, so the sample comes from a normally distributed population. The next stage, after passing the prerequisite test stage which includes the normality test and homogeneity test, is continued with the hypothesis testing stage with the t-test. The hypothesis is carried out by conducting a sample t-test analysis correlated with the product moment formula and carried out at the 5% level. The test criteria are that if the calculation results show that the t-count > t table, then $H_0$ is rejected $H_1$ is accepted. The result of pretest and posttest is show in Table 7.

**Table 7**. Pre-Test and Post-Test

| Statistic | Pre-test and Post-test |
|---|---|
| Mean | -39.50000 |
| Std.Deviation | 6.34497 |
| Std.Error Mean | 1.15843 |
| 95% Confidence Interval of the Difference Lower | -41.86925 |
| 95% Confidence Interval of the Difference Upper | -37.13075 |
| t | -34.098 |
| df | 29 |
| Sig. (2-tailed) | 0.000 |

Based on Table 7, it is known that the sig. (2-tailed) is 0.000. These results show that the significant value is smaller than 0.05, so $H_0$ is rejected. $H_1$ is accepted, so it can be concluded that there is a significant difference in the science and science learning outcomes of class IV students at State Elementary School 2 Sumberklampok before and after using animated learning videos in the learning process.

**Discussion**

Based on validation results from learning content experts, it is known that the animated learning video media is classified as good, where the process of preparing the material is based on the science and technology learning module, especially on style and movement material. The material is prepared in accordance with the core

competencies and learning objectives used, apart from that the material discussed is accompanied by illustrations and the use of language that is easily understood by students in the learning process, this can be seen or supported from the results of individual trials and small group trials where students stated that animated learning videos were very interesting and could increase learning motivation (Fahmi et al., 2021; Samani et al., 2019). There are suggestions, input and comments provided by learning content experts, where the animated learning videos are good and increase students' enthusiasm for learning. Judging from the suggestions, input and comments which state that the animated learning video does not require any revision of the content of the animated learning video problem based learning (Puspaningtyas & Ulfa, 2020; Rahayu et al., 2021).

After validating the learning content, the second validation is carried out by a learning design content expert. Based on a review by learning design experts, the quality of animated learning videos received a very good category, but revisions have been completed so that animated learning videos are suitable for use in learning design expert tests (Eleaser et al., 2023; Zulherman et al., 2021). Suggestions and input provided by learning design experts indicate the need to add developer biodata and include the supervisor at the end of the video and add appropriate information in terms of typing material or wording, making it easy for students to understand what is presented. This is supported by previous study state that the suitability of images with learning material also causes students to easily understand the information presented (Liniasari et al., 2021; Syahrozi et al., 2019).

After validating the learning design expert, the next step is validating the learning media expert. Based on a review by learning media experts, the quality of the problem based learning video was categorized as very good, however there have been revisions that have been completed so that this problem based learning animated learning video media product is suitable for use in the learning media expert test. Suggestions and input provided by learning media experts indicate revisions in terms of background appearance where objects must be made clear so that they are easily understood by students (Rahimah et al., 2020; Utomo & Ratnawati, 2018). This is very much in line with the statement put forward by previous study namely that animated video media has positive benefits in learning where the use of animated video media can increase students' understanding where video content is related to topics in life. students' daily lives (Farida et al., 2022; Rahayu et al., 2021).

The trial stage is the stage carried out after passing the learning content expert, learning design content expert and learning media expert testing stages, then tested on class IV students at State Elementary School 2 Sumberklampok. Learning animation videos are in the very good percentage category with results from individual trials and small group trials because it is seen from the ease of using learning video media and also this learning video has an attractive appearance/content so that it makes it easy for students to understand, thereby increasing motivation. student learning. The higher students' learning motivation certainly has a positive impact on student learning outcomes. This is supported by study namely that if students' interest in learning is high in learning, then the material will be easy to understand, learning outcomes will be better, and learning objectives can be achieved as desired (Aluintany & Bektiningsih, 2024; Magdalena et al., 2021). Regarding the effectiveness of animated video media, learning is carried out using the test method. The test method was measured by giving multiple choice question sheets to 30 class IV students at State Elementary School 2 Sumberklampok, through pretest and posttest. Based on the pretest and posttest scores, a t-test was carried out for correlated samples. The score increases when students answer the test given, where most of the students get it wrong on the pretest, but answer correctly on the posttest. The increase in grades was due to the problem-based learning video media used during the learning process. The use of animated learning video media in the learning process can make it easier for students to understand the material and improve students' learning outcomes. In this animated learning video, the material is equipped with illustrative images so that students can listen to the video by knowing examples, especially regarding force and movement. Apart from that, the learning animation video media also provides feedback in the form of evaluation of group discussions regarding the material contained in the learning animation video media. Using pictures and animations with appropriate colors can increase student interest (Arliza et al., 2019; Dayanti et al., 2021).

Previous research findings state that animation media can make learning more interesting and interactive so that it can improve student learning outcomes (Hanif, 2020). Other findings state that animated learning videos can make it easier for students to learn so that they can improve student learning outcomes (Khairunnisaa et al., 2023). The results of research by other study show that it can increase students' attractiveness to learning (Cahyani et al., 2020; Nurhayatin et al., 2023). The advantages of animated videos are that the material presented is very systematic and simple, the examples given are easily understood by students to learn. Interesting illustrations or images can make it easier for students to understand learning material. The weakness in this study is that the manufacture takes a long time and requires storage space. The implication of this research is that the media developed can be used by teachers in teaching to make it easier for students to understand learning materials. And this has an impact on student learning outcomes that increase. Thus, judging from the results of the development of problem based learning animated learning video media on science content, especially on class IV style and movement material at State Elementary School 2 Sumberklampok, this animated learning video media has made quite a big contribution in improving student learning outcomes.

## 4. CONCLUSION

The results of this development research are: (1) design and development of learning animation videos using the ADDIE model, (2) results of the validity of learning animation video media, (3) effectiveness of using learning animation videos. The subjects of this research include learning content experts, learning design experts, learning media experts, individual trial students, and small group trial students. The method used to collect data is the questionnaire and test method. The data analysis techniques in this research are quantitative descriptive and t-test inferential statistics. The data collection instruments in this research are questionnaires and tests. The results of calculating scores from experts (learning content experts, learning design experts, learning media experts), individual trials and small group trials obtained very good qualifications.

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