

Bringing Diversity Education to Life: The Impact of Learning Videos on Elementary School Students' Learning Outcomes

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ABSTRACT

This study examines the lack of comprehension among students regarding subject matter that is highly relevant to their daily lives, emphasizing the importance of their understanding. The encounter with diverse situations outside the classroom is a common experience for students; however, the insufficient availability of learning tools, unappealing media, and inadequate utilisation of school facilities contribute to their limited understanding. To address this issue, learning films are proposed as an alternative media to enhance student engagement, serve as effective learning materials, and make use of school resources such as projectors. The aim of this research is to create and evaluate the effectiveness of instructional video media with a diversity theme in improving learning outcomes among class III elementary school students. The design and development (D&D) method, specifically the PPE development model, was utilised in this study, involving three stages: planning, development, and evaluation. The input of media experts, material experts, and learning experts was sought to assess the feasibility of the learning videos. The results indicated that the learning films received a feasibility rating of 95% in the "extremely feasible" category, affirming their suitability for educational settings. Experts predicted that the implementation of learning films could significantly enhance student learning outcomes. The methodology encompassed data collection through the D&D method, including planning and conducting evaluations by experts, as well as the subsequent analysis and interpretation of the results. Ultimately, this study aims to improve the actual learning outcomes of class III elementary school students through the utilisation of instructional video media with a diversity theme.

1. Introduction

Good learning is intricately tied to the relevance of educational materials to students' real lives. Among the materials that hold such relevance are those pertaining to the diversity of teaching in social studies. The material on diversity of teaching in social science is not only connected to the teaching of science but also plays a crucial role in the development of higher-order thinking skills. These skills, including critical, argumentative, reflective, and scientific process skills, are vital for students to effectively confront the challenges of everyday life (Aktamiş & Yenice, 2010; Saïdo et al., 2018; Zachariades et al., 2013). By cultivating these higher-order thinking abilities, science education aims to foster students' intellectual growth and promote long-lasting understanding, leading to enhanced learning outcomes.

In the realm of audiovisual media, video learning stands out as a potent tool that captivates the audience's attention (Wisada et al., 2019).. Functioning as an audiovisual medium, video learning allows students to observe real incidents, enriching their learning experiences significantly. Educational videos, in particular, have the unique ability to motivate students by presenting ideas, messages, and information in an engaging audiovisual format (Wisada et al., 2019).. Extensive research, exemplified by the work of Agustini and Ngarti (2020), has demonstrated the positive impact of videos on students' motivation and learning outcomes. When educational media effectively capture students' attention, their motivation to learn surges, leading to improved academic performance (Agustini and Ngarti (2020).

The theme of diversity assumes paramount importance in students' lives, as they consistently encounter various forms of diversity within their classroom environments. Personalized learning environments play a vital role in optimizing students' learning experiences and outcomes (Boelens & De Wever, 2018; Räisänen et al., 2016; Vasileva-Stojanovska et al., 2015). Embracing differentiated education, these environments cater to each student's unique needs (Imbeau & Tomlinson, 2013). Organizational management of student diversity often involves categorization or tracking based on specific traits, such as prior educational experiences (Ruys et al., 2013). In response, dedicated teachers adapt their instructional strategies to accommodate the diverse needs of their students (Tomlinson et al., 2003).

Despite the naturally diverse nature of classrooms, many students encounter difficulties in comprehending material related to diversity. Commonly, students become perplexed and seek clarification when tasked with writing about diversity in their books. Furthermore, the utilization of learning media remains underexplored, primarily relying on conventional student books that may not be accessible to all learners. The lack of diverse and engaging learning resources results in diminished student concentration. A further contributing factor is the limited visual appeal of media utilized in classrooms, such as blackboard images lacking in attractiveness, which hinders effective absorption of the material. Consequently, there is a pressing need for engaging learning media that can substantially improve student learning outcomes (Wisada et al., 2019; Olson & Wisher, 2002; Ljubojevic et al., 2014). To address this challenge, we propose employing learning videos as a compelling medium.

Learning videos, as a form of audiovisual media, leverage moving images and sound to deliver ideas, messages, and information that positively impact students' learning experiences (Suryansyah and Suwarjo (2016). Research, like that conducted by Agustini and Ngarti's (2020) confirms the capacity of videos to enhance motivation and learning outcomes. This audiovisual medium not only fosters motivation but also aids in conveying intangible material or phenomena that cannot be readily observed in real-life settings (Agustini & Ngarti's (2020).

This study endeavors to develop learning media in the form of instructional videos that focus on diversity, with the aim of elevating the learning outcomes of primary school students. The Design and Development (D&D) research method, specifically the PPE development model comprising planning, production, and evaluation stages, will guide this endeavor. By engaging media experts, material experts, and learning experts, we aim to ensure the feasibility and effectiveness of these learning videos in educational settings, ultimately striving to enhance student learning outcomes (Novita et al., 2019).

The primary research questions guiding this study are as follows:

- 1) What characteristics define the diversity learning video for enhancing the learning outcomes of grade III primary school students?
- 2) How do experts assess the learning video on diversity in terms of its potential impact on primary students' learning outcomes?
- 3) How will the final design of the diversity learning video contribute to improved learning outcomes among grade III primary school students?

Through answering these research questions, we aspire to advance the understanding of learning video efficacy in promoting student comprehension and learning outcomes, with a particular focus on diversity themes.

2. Method

The research method used is the Design and Development (D&D) research method. Methods of Design and Development (D&D) is a design-related creative science. In more detail, the Design and Development (D&D) method proposed by Richey and Klein in Spector et al., (2014) is "the systematic study of design, development, and evaluation processes with the aim of establishing an empirical basis for the creation of instructional and non-instructional products and tools and new or enhanced models that govern their development."

Design and Development (D&D) is a science of creating instruction, media, and related materials using systematic and iterative processes, typically employing formative evaluation (Fitrianingsih, 2019; Wibawa et al., 2021). The Design and Development (D&D) research method is a systematic, iterative, and cyclical process for creating, refining, and evaluating learning materials and interventions (Reksiana, 2022). According to Richey and Klein in (Spector et al., 2014), "Design and Development (D&D) is the systematic study of design, development, and evaluation processes with the aim of establishing an empirical basis for the creation of instructional and non-instructional products and tools and new or enhanced models that govern their development." The D&D research method involves a cyclical process of analyzing needs, designing solutions, developing and testing prototypes, evaluating outcomes, and revising the design as needed (van den Akker et al., 2013). This method has been widely used in the development of educational technologies, including learning videos, and can provide a rigorous framework for ensuring that these products meet the needs of learners and educators alike.

This is a structured study that begins the process of design, development and evaluation to develop a product that includes teaching and non-teaching resources and new or improved models. The model

used in this study is the one developed by Rickey and Klein with the three research steps of planning, production and evaluation. Below are the research steps of the PPE model.

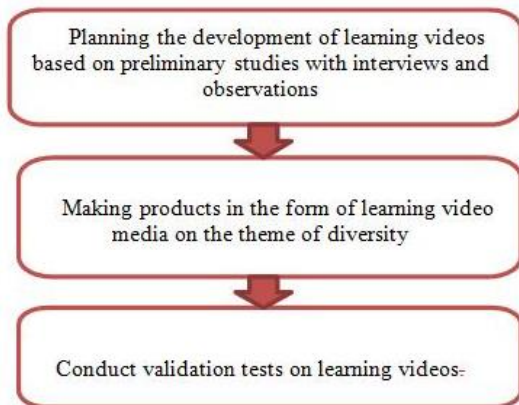


Figure 1. PPE Development Model

2.1 Sampling method

This research uses a purposive random sampling technique. First, a deliberate selection of the sample is carried out to fulfil a particular research or project objective, and then from the selected group, the sample is taken randomly to ensure representativeness. So, the students of SDN Tonjong I were chosen as the research sample.

2.2 Research procedure

The procedure in this study is to follow the steps for developing the PPE model, which consists of three steps: planning, production, and evaluation. The approach that researchers take is the development of learning videos on the theme of diversity with the following procedures:

a. Planning

At this stage, the researcher conducted a preliminary study by observing the learning process and interviewing teachers regarding diversity material on theme 5. Based on observations and interviews, researchers found several problems, as follows:

- 1) Pupils lack learning materials; each class has only 10 pupils' books, so many pupils have no book handles when learning.
- 2) The use of school facilities, such as projectors, is rarely used, so many projectors are damaged because they are not used.
- 3) The media used by the teacher to teach diversity does not catch the attention of the students. This means that students still often ask questions when the teacher gives them tests.

Based on these findings, the researcher plans to develop learning videos that can be used as learning resources and media that can be used with school projectors. The development of the learning video in

question relates to the topic of diversity in primary school III.

At this stage, the researcher will also conduct an analysis in the form of a user analysis, a material analysis and a software requirements analysis.

b. Production

At the production stage, researchers carried out several stages of developing instructional video media, namely:

- 1) Develop an outline of the media program (GBPM).
- 2) Create narration and audio recordings.
- 3) Create animation.
- 4) Collecting and illustrating images
- 5) Combine all components to make learning videos.

c. Evaluation

In this evaluation phase, a feasibility test was conducted on the learning videos that the researcher had created. The feasibility test was conducted by a learning expert, namely a primary school teacher of class III, a material expert and a media expert by filling in the validation sheet prepared by the researcher. This expert evaluation is done to improve the learning video based on the experts input and suggestions.

The finalisation of the learning videos is the last stage of product creation before the students use them in their learning. In addition, the researchers managed the data received from the experts and produced reports according to the research methodology.

2.3 Research data sources

The source of data in research is the subject from which the data is obtained. In this study, researchers used the following data sources:

a. Teacher

To obtain data about problems in the material and media, researchers observed the teaching given by the teacher and conducted interviews. In addition, the researcher will also ask for input and suggestions from the teacher after making a product in the form of learning video media.

b. Validator

The validator is an expert in one of the fields whose job it is to provide an assessment of the product being developed. The validators or experts who will assess the research, learning, and video media products are:

1) Material Expert

The material expert in question is a lecturer who is competent in diversity material and testing material in the learning video media that has been made.

2) Media Expert

The media expert in question is an expert lecturer in media who plays a role in assessing the learning video media that has been made by researchers.

3) Expert Learning

The learning expert in question is a class III teacher at one of the elementary schools located in the district. Majalengka, West Java. The teacher's role is to assess the feasibility of learning contained in learning video media made by researchers.

2.4 Data collection technique

Before the intervention, a pre-test is conducted to assess students' baseline knowledge and comprehension of the diversity subject matter. The selected class receives instruction using the learning videos with a diversity theme over a specified period. After the intervention, a post-test is administered to measure the students' learning outcomes and the effectiveness of the learning videos.

A data collection technique is a method or method used to collect data, which will then be processed based on the results of research conducted. Data collection techniques are used as a method of obtaining data in research. The data collection techniques used in this study are as follows:

a) *Observation*

The observations in this study used a checklist observation tool. A checklist is made to facilitate the recording of observation results

b) *Interview*.

Researchers conducted interviews with teachers to identify problems with the diversity material in social science lessons. In addition, interviews were also conducted to find out the media used by the teacher in the classroom. Interviews were conducted using a planned, unstructured interview method. The results of the interviews assist researchers in formulating appropriate instructional video designs;

c) *Questionnaire*.

The questionnaire used to find out the validator's responses regarding the learning videos that had been developed by the researcher. The questionnaire used is closed where there are already alternative answers that have been made by the researcher. The questionnaire is related to the formulation of the second problem, which is about expert judgment related to video learning. The resulting product is then assessed by the validator for evaluation and improvement according to expert input and judgment.

2.5 Data Analysis

Focus group discussions are conducted with a subset of students to gather their perceptions, feedback, and experiences regarding the learning videos. Thematic

analysis is employed to identify emerging themes and patterns in the qualitative data.

2.6 Research Instruments

In research, questionnaires are used to collect data. "A questionnaire is an assessment instrument from experts and users of the product being developed," writes [Ainin \(2013\)](#). So it can be seen that the questionnaire is an object intended to collect data. There are 3 types of questionnaires used in collecting data, namely, expert validation questionnaires that will be filled out by validators who are useful to know diversity what is being developed is feasible or not. Teacher response questionnaires and student responses aimed at knowing grammar, the readability of reading books, and the success of the Literacy Movement in schools. Meanwhile, to determine the level of validity of the product, the validation score must be correlated with the following criteria:

Table 1. Teaching Materials Validity Criteria

Interval	Category
0,80 – 1,00	Very high
0,60 – 0,80	High
0,40 – 0,60	Medium
0,20 – 0,40	Low
0,00 – 0,20	Very low

The validity criteria listed in the table must be fulfilled by the reading book product to be developed so that it can be declared valid if it has a minimum category of "medium" with an interval of 0.40–0.60 or a category of "very high" with an interval of 0.80–1,00. The teacher and student response test is different from the validity test because the results of the teacher and student response test must meet the following criteria:

Table 2. Teacher and Student Response Criteria

No.	Interval %	Category
1	81 – 100	Very Worth
2	80 – 61	Worthy
3	60 – 41	Decent Enough
4	40 – 21	Not feasible
5	20 – 0	Very Unworthy

Based on the table, reading books can be declared appropriate if the minimum average value of the questionnaire is 61 and the maximum is 100.

2.7 Validation and Reliability

The research instruments, including the pre- and post-tests and the focus group discussion guidelines, undergo validation by experts in the field of education. Content validity is ensured by aligning the research instruments with the core competencies and basic competencies outlined in the curriculum. To establish reliability, a pilot study is conducted with a small sample of students before the main data collection to assess the consistency and clarity of the research instruments.

3. Result

The stages are: first, identifying problems and potentials that can overcome existing problems; second, after knowing there are potentials and problems, collecting data by conducting interviews. Third, make product designs to overcome problems. Fourth, product designs are validated by experts. Fifth, after

being validated by media experts, product revisions are made according to suggestions. Sixth, try out schools on a small scale. Seventh, after small-scale trials, the product is revised according to input. The eighth stage is to test the product on a large scale; the ninth stage is to revise the product if anything needs to be changed. The final stage is that the product is mass-produced to be donated to schools.

3.1 Media Expert Assessment Results

An assessment by media experts is needed to determine the feasibility of instructional video media. An evaluation of the instructional video medium was carried out by one of the lecturers in the Elementary School Teacher Education Study Program at the Indonesian University of Education, Bumi Siliwangi campus, with the initials SFG, M. Pd. The results of the material expert's assessment are as follows:

Table 3. Results of Media Expert Assessment

No	Componens	Value
1	Message can be received by the target	5
2	Media can attract attention	4
3	Media can stand alone (not depend on other media)	4
4	Ease of use	5
5	The attractiveness of the video display (colors, backgrounds, animations, illustrations and images)	5
6	Sound clarity	4
7	Matching music with sound	4
8	Text type accuracy	4
9	Text size accuracy	4
10	Video resolution quality	4
11	Time suitability	4
12	Creativity in expressing ideas	4
Total		51

Table 3 shows the results of media experts' assessments of the promotional video components. Assessment is carried out using a scale of 1 to 5, where a value of 5 indicates the highest value and a value of 1 indicates the lowest value. The results of the assessment are then added up to get the total value, which in this table is 51.

From the results of this assessment, it can be seen that the component that is rated the highest by media experts is the ability of the message to be received by the target (score 5), followed by the attractiveness of

the media (score 4) and the ability of the media to stand alone (score 4). While the lowest score is given to the suitability of music with sound (value 4), text size accuracy (value 4), and video resolution quality (value 4).

Based on the assessment of media experts, learning videos get a score of 51 out of a total score of 60. The percentage of media eligibility gets a percentage of 85% in the "Very Eligible" category, which is obtained by calculating the percentage as follows: $N = 51/60 \times 100\% = 85\%$.

In addition, there are comments and suggestions from media experts regarding learning videos on the theme of diversity to improve learning outcomes for grade III elementary school students. The improvement given by media experts is that the use of capital letters must be considered because in some explanations they do not use capital letters at the beginning of the text. The letters in the quiz are too small, so the letters have to be enlarged, and the change of questions is too fast, so it is better to add the duration of displaying the questions. In addition, the explanation of the concept of diversity is truncated and needs to be corrected.

Furthermore, on the question of the media expert validation sheet, the learning videos that the researchers developed are expected to improve the learning outcomes of class III elementary school students.

The results of the assessment by media experts can be a guide for promotional video makers to improve the quality of their promotional videos. For example, a promotional video maker can pay attention to the compatibility of the music with the sound used, the size of the text used, and the quality of the video resolution. Thus, it is expected that promotional videos can have a higher appeal and be more effective in attracting the attention of the target market.

According to Lee, et al., (2019), the match between music and sound used in promotional videos can affect the target market's perception of the brand being promoted. In addition, using the right text size can also increase the effectiveness of the message conveyed in the promotional video (Gao et al., 2020). Meanwhile, increasing the quality of video resolution can give a more professional impression and strengthen the brand's image (J. Yang et al., 2022). Promotional video makers can consider the results of the assessment by media experts in the table and refer to available references to improve the quality of their promotional videos. That way, it is hoped that promotional videos can be more effective in attracting the attention of the target market and achieving the desired promotional goals.

3.2 Material Expert Assessment Results

Assessment by material experts is needed to determine the feasibility of the material in learning videos. An assessment of diversity material on the theme of diversity in the learning videos was carried out by one of the lecturers in the Elementary School Teacher Education Study Program at the Indonesian Education University, Cibiru campus, with the initials "Dr. YA, M.Pd." The results of the material expert's assessment are as follows:

Table 4. Results of Material Expert Assessment

No	Components	Value
1	Conformity of the content of the material with core competencies and basic competencies	5
2	Conformity of learning objectives with basic competencies	5
3	Clarity of learning objectives	5
4	Suitability of illustrations or images with the Material	5
5	The content of the video is interesting	5
6	The language used is in accordance with the development of students	5
7	Increase student interest in learning	5
8	Material clarity	5
9	The truth of material substance	5
10	Loss of material substance	5
11	The material is easily understood by students	5
12	The material presented is interesting	5
Total		60

The table above shows the results of the material expert's assessment of the learning videos. The results of the assessment show that the learning videos meet the desired criteria, such as suitability of content with core competencies and basic competencies, clarity of learning objectives, compatibility of illustrations or images with material, readability of material, and increased student interest in learning. The total score obtained is 60, indicating that the learning video is considered very good by material experts.

Assessment by material experts is very important in making learning videos because they have sufficient knowledge and experience in the field of education. In this assessment, material experts assess whether the learning videos are in accordance with the curriculum and meet the set criteria. The results of the assessment by material experts can be used as a reference for improving the quality of learning videos.

Based on the assessment of material experts, the material in the learning video gets a score of 60 out of a total score of 60. The percentage of eligibility for the material gets a percentage of 100% in the "Very Eligible" category, which is obtained by calculating the percentage as follows: $N = 60/60 \times 100\% = 100\%$.

In addition, there are comments and suggestions from material experts related to learning videos on the theme of diversity to improve learning outcomes for grade III elementary school students. Comments given by material experts, namely that learning videos are

good but slow down the duration of the questions in the quiz.

For example, if the assessment finds that there are deficiencies in the material or illustrations used, then the makers of the learning videos can improve this so that the learning videos become more effective in increasing students' interest and understanding. As revealed by Al-Amri (2020), effective learning videos can increase student motivation and interest in learning and assist in achieving learning objectives. In addition, research by Kay & Kwak (2018) found that learning videos can be particularly beneficial for students who struggle with traditional forms of instruction or who have different learning styles.

Thus, assessment by material experts is important for making effective and high-quality learning videos. By paying attention to the assessment results and available references, learning video makers can improve the quality and effectiveness of their learning videos by increasing student interest and understanding.

3.3 Learning Expert Assessment Results

Assessment by learning experts is needed to determine the feasibility of the learning contained in learning videos. An assessment of learning diversity material in learning videos was carried out by a class III teacher at one of the elementary schools located in the district. Alor, East Nusa Tenggara, with the initials ADK. The results of the learning expert assessment are as follows:

Table 5. Learning Expert Assessment Results

No	Componens	Value
1	Conformity of the content of the material with core competencies and basic competencies	5
2	Conformity of learning objectives with basic competencies	5
3	Clarity of learning objectives	5
4	Appropriate illustrations or drawings	5
5	Accurate use of language	5
6	Video fun	5
7	Increase student interest in learning	5
8	Ease of access	5
9	Help the teacher convey the material	5
10	Material clarity	5
11	The material is easily understood by students	5
12	The material presented is interesting	5
Total		60

Table 5 presents the results of the Learning Expert Assessment, which evaluated the learning videos based on various components such as conformity with core competencies and basic competencies, clarity of learning objectives, appropriate illustrations, and language accuracy. The highest score that can be obtained is 60, and the learning videos received a total score of 60, indicating that the videos are suitable for use in schools.

Based on the assessment of learning experts, learning in learning videos gets a score of 60 out of a total score of 60. The percentage of eligibility for learning gets a percentage of 100% in the "very eligible" category, which is obtained by calculating the percentage as follows: $N = 60/60 \times 100\% = 100\%$

In addition, there are comments and suggestions from learning experts regarding learning videos on the theme of diversity to improve learning outcomes for grade III elementary school students. Comments given

by learning experts, namely that learning videos are good and fun. The suggestion is that the duration of the questions in the quiz be extended.

Furthermore, on the question of the learning expert validation sheet, the learning videos that the researchers developed are expected to improve the learning outcomes of class III elementary school students.

3.4 Final Design of Learning Videos

The final design process of the learning video is carried out at the evaluation stage. The results of the expert assessment are used as a benchmark for revising the learning videos. Learning video revision processes done once by getting revisions from media experts, material experts, and learning experts. The following table fixes the learning video:

Table 6. Learning Video Improvements

No	Suggestion	Description Improvement
1	Don't use the word "well" at the beginning of explaining the concept of diversity because it's like "truncated."	The researcher eliminated the initial explanation of the concept of diversity and immediately explained the meaning of diversity.
2	Slow down the time duration on the questions in the quiz.	Because the capital letters in the initial font were not very clear, the researcher changed the font in the material explanation, which initially used the HS Yuji Regular font, to Roboto Medium. in addition to the video usage instructions section. The researcher changed the font from HS Yuji Regular to Droid Sans Mono.
3	Clarity of learning objectives	The researcher changed the duration of each question in the quiz from 4 seconds to 7 seconds, and the entire video quiz from 1 minute, 33 seconds to 2 minutes, 2 seconds.
4	Enlarge the text on the problem	The researcher enlarges the question text by drawing the enlargement line and changing the line from 0 to +6.

After the researcher revised the learning video, the final design of the learning video on the theme of diversity was made to improve learning outcomes for elementary school students in the third grade.

4. Discussion

The results of this study indicate that researchers have used a comprehensive approach to designing learning videos related to diversity in social science. The research method used includes interviews with teachers to identify problems and potential in diversity

materials, as well as to find out the media used by teachers in class.

The steps taken in this research include identifying problems and potentials, collecting data through interviews, designing products to solve problems, validating products by media experts, revising products based on expert advice, conducting trials in schools on a small scale, and making product revisions based on feedback. from trials, large-scale product testing, and finally, mass production of products to be donated to schools.

The results of the media expert assessment provide valuable insights into the evaluation of the instructional video media. The assessment aimed to determine the feasibility and effectiveness of the learning films in enhancing student engagement and learning outcomes. In conclusion, the media expert assessment indicates that instructional video media with a diversity theme demonstrates high feasibility and effectiveness in enhancing student engagement and learning outcomes. The overall score of 51 out of 60 reflects a positive evaluation of the learning films. However, there is room for further improvement in areas such as attention-grabbing and the matching of music with sound. These findings support the integration of instructional video media as a valuable tool for promoting comprehension and student engagement in class III elementary school students. The results of the media expert's assessment show that this learning video is very feasible with a score of 85% in the "Very Eligible" category. Media experts give a high assessment of the message that can be received by the target, the attractiveness of the media, and the ability of the media to stand alone. However, there are some suggestions for improving the video quality, such as paying attention to the suitability of the music for the sound used (K. Yang & Shi, 2022), the size of the text, and the quality of the video resolution (Wu et al., 2022). In accordance with research by Yang and Shi (2022), which found that voice assistance can help overcome the problem of decreased video quality and increase learning efficiency,

The results of the material expert assessment, which aimed to evaluate the instructional video media's content and its alignment with the core competencies and basic competencies of the curriculum. In conclusion, the material expert assessment demonstrates that the instructional video media with a diversity theme effectively aligns with the core competencies and basic competencies of the curriculum. The high total score of 60 out of 60 reflects the material's positive evaluation in terms of content, clarity, suitability, and engagement. These findings confirm the suitability and effectiveness of the instructional video media in enhancing student interest, understanding, and overall learning outcomes in class III elementary school students. Assessment by material experts shows that the material in the learning videos is also very feasible, with a value of 100%. Material experts give a high assessment of the suitability of the material with core competencies and basic competencies, as well as the legibility of the material and increasing student interest in learning. This video revision focuses on increasing the length of the questions in the quiz. The assessment by material experts reflects the effectiveness of the learning video in aligning with core competencies and basic competencies, ensuring that the content is relevant and in line with the required educational standards. Additionally, the experts have acknowledged the clarity and readability of the material, indicating that

the information presented in the video is easy for students to understand.

Furthermore, the assessment highlights the learning video's ability to enhance student engagement and interest in the topic of diversity. By capturing the students' attention and sparking their curiosity, the video creates a positive and interactive learning experience. This is crucial to fostering active participation and promoting a deeper understanding of the subject matter. To further enhance the learning video, the researchers have wisely chosen to focus on increasing the duration of the questions in the quiz section. This revision will allow students more time to process and respond to the questions adequately, ensuring a thoughtful learning experience. By extending the quiz duration, the researchers aim to provide students with ample time to consider the questions and choose the most appropriate answers, encouraging critical thinking and reinforcing their comprehension. Moreover, it is essential to emphasise that the improvements made based on the material expert's feedback contribute significantly to the overall effectiveness and quality of the learning video. The revision process serves as an iterative approach to refining the video's content, visuals, and interactive elements to optimise student learning outcomes.

By incorporating valuable insights from material experts, the learning video becomes a comprehensive and powerful tool for educators. It effectively conveys essential concepts related to diversity while keeping students engaged throughout the learning process. As a result, the improved learning video is better equipped to inspire and enrich students' understanding, fostering a positive and inclusive learning environment.

The results of the learning expert assessment, which aimed to evaluate the instructional video media's effectiveness in enhancing student learning outcomes. In conclusion, the learning expert assessment confirms the effectiveness of the instructional video media in enhancing student learning outcomes. The perfect total score of 60 out of 60 indicates the material's positive evaluation in terms of content, clarity, engagement, and support for both students and teachers. These findings provide strong evidence for the integration of instructional video media with a diversity theme as an effective tool to foster student interest, understanding, and overall learning outcomes in class III elementary school students.

In addition, the assessment by learning experts shows that the learning in this video is also very feasible, with a score of 100%. Learning experts give a high assessment of the suitability of content with core competencies and basic competencies, as well as material readability and increased student interest in learning. The revisions made include changing the font and extending the duration of the questions in the quiz.

From the results of this study, it can be concluded that the learning videos designed by researchers are of

high quality and are very suitable for use in learning about diversity for grade III elementary school students. This research shows the importance of involving media experts, material experts, and learning experts in designing effective and quality learning products.

The results of this study can be used as a reference for creators of learning videos to continuously improve the quality of their learning videos, as well as to consider suggestions from media experts, material experts, and learning experts. By paying attention to the results of the assessment and the suggestions given, it is hoped that learning videos can become more interesting and effective in increasing student interest and understanding. This study also emphasises the importance of a holistic and collaborative approach to designing effective learning products to meet students' needs and achieve the desired learning goals. Here are some reasons why this approach is important: 1) **Collaboration**: In designing learning products, collaboration between various experts and stakeholders can help ensure that the product meets students' needs and achieves the desired learning goals (Luo et al., 2020). Collaboration can also help ensure that the product is easy to use and accessible to all students (Luo et al., 2020). 2) **Holistic approach**: A holistic approach to designing learning products considers various aspects of learning, such as learning theory, instructional strategies, software development, and web usability (Luo et al., 2020). By considering all these aspects, learning products can be designed in a more effective and efficient way. 3) **Project-based learning**: Project-based learning can help students take responsibility for their own learning process (González-Domínguez et al., 2020). In the context of designing learning products, project-based learning can help students understand how the product is designed and why it is designed in a certain way. 4) **Skills development**: Designing effective learning products can help students develop skills needed for success in the real world, such as collaboration, problem solving, and communication skills (Soomro et al., 2022). Well-designed learning products can also help students develop the technical and technological skills needed for future success (Soomro et al., 2022).

In addition, the results of this study also highlight the importance of teacher involvement in the development and use of learning videos. Teachers have a key role in delivering learning material to students, and instructional videos can be an effective tool for improving classroom teaching. By involving teachers in testing and validating learning videos, they can ensure that the material presented is in accordance with the needs of students and the applicable curriculum. Several studies have shown that the introduction of videos specifically designed for self-study as part of the learning process can improve exam results and enable students to study independently (Arias et al., 2011). Future teachers are involved in the production of science demonstration videos that can be used as

teaching and learning resources (Tembrevilla & Milner-Bolotin, 2019), and they can use the videos to build more on students' ideas and support collaboration between students (Brown & Kennedy, 2011). The use of learning videos and gamification methods can increase student motivation and involvement in the learning process (Paradise et al., 2021), as well as have a consistent positive relationship with the assessment of teaching quality and student learning experience (Jaekel et al., 2021). Other research suggests that teachers need explicit pedagogical support to begin to develop a sophisticated epistemology of play and apply play pedagogy (Loizou, 2017).

This research also shows that in developing instructional videos, special attention should be paid to various aspects, such as content, visual design, sound, and duration. Learning videos must be interesting, easy to understand, and can increase student interest in learning. Revision and repeated testing are also important steps in the learning video development process so that the resulting final product is even better and in accordance with user needs. In addition, collaboration between researchers, teachers, and media, material, and learning experts also strengthens the quality of learning videos. Each expert provides valuable views and input in perfecting learning products. The involvement of these experts helps ensure that learning videos are not only visually appealing but also effective in conveying learning material in a clear and interesting way.

The implication of the results of this study is that the use of learning videos in the context of learning about diversity can increase students' interest and understanding. Learning videos that are well designed according to the curriculum and student needs and get validation from experts have great potential to be effective tools in achieving learning goals. In addition, this research also underscores the importance of further research and development in the field of using video learning. By continuing to improve technology and innovation in making learning videos, we can be more effective in presenting learning materials in an interesting and challenging way for students.

In conclusion, this study succeeded in designing high-quality learning videos to teach about diversity to third-grade elementary school students. The video development process involved the stages of problem identification, data collection through interviews, product design, validation by media, material, and learning experts, as well as small and large-scale trials. The stages of video development consist of analysis, design, development, implementation, and evaluation (Ramadhani et al., 2022). The stages of developing learning videos include needs analysis, material preparation and product design in accordance with the learning objectives to be achieved, product implementation, and evaluation (Asrori et al., 2021).

The stages of video development can also be found in the development of online video sharing platforms for education (Ali & Nasir, 2010), and development of course materials to improve the quality of learning (Canelos & Catchen, 1988). This learning video is considered very feasible and effective by media, material, and learning experts. Thus, this learning video is expected to make a positive contribution to increasing students' understanding of diversity and strengthening the learning process in the classroom. It is hoped that this research can become an inspiration for the development and wider application of instructional videos in the field of education to achieve better and more enjoyable learning outcomes for students.

In conclusion, the suggested improvements in Table 6 address various aspects of the learning videos to enhance clarity, understanding, and engagement. By eliminating initial explanations, adjusting the duration of quiz questions, improving font visibility, and enlarging text, the researcher aims to ensure that the instructional video media optimally supports student learning outcomes. These improvements reflect the researcher's responsiveness to the feedback received and their commitment to continually enhance the quality and effectiveness of the learning materials.

5. Conclusion

The study developed teaching material products and assessed them through teacher and student response tests at SDN Tonjong I, with an average rating of 95% in the "Very Eligible" category. Learning videos proved effective in delivering diverse content to third-grade students in line with basic competencies. They were found to be suitable for both offline and online learning, utilizing existing school and student infrastructure. Teachers are encouraged to create learning videos for challenging topics and implement thematic learning based on the 2013 curriculum, integrating multiple lessons seamlessly. For future research, adding diverse references related to learning video development is recommended. The study's contributions lie in demonstrating the potential of learning videos in elementary schools, promoting their integration and enhancing educational practices. It provides empirical evidence of the benefits of learning video implementation, fostering student engagement and learning outcomes. As educational institutions adapt to technology and learning, the study's findings are significant in improving instructional practices and creating a dynamic learning environment. By exploring various themes and materials for learning videos, future research can further enrich academic literature in this field, continuing to advance teaching methodologies and the quality of education. Overall, learning videos hold promise in shaping a more inclusive and effective learning experience for students.

References

- Agustini, K., & Ngarti, J. G. (2020). Pengembangan video pembelajaran untuk meningkatkan motivasi belajar siswa menggunakan model R&D. *Jurnal Imiah Pendidikan dan Pembelajaran*, 4(1), 62-78.
- Ainin, M. (2013). Penelitian pengembangan dalam pembelajaran bahasa Arab. *Okara*, 2(8), 1-16.
- Aktamiş, H., & Yenice, N. (2010). Determination of the science process skills and critical thinking skill levels. *Procedia - Social and Behavioral Sciences*, 2(2), 3282–3288. <https://doi.org/10.1016/j.sbspro.2010.03.502>
- Ali, A. Z. M., & Nasir, N. (2010). Development Process Of Online Educational Valued Video Sharing Platform *Proceedings of The 4th International Conference on Teacher Education*. UPI & UPSI Bandung, Indonesia (pp. 621-628)
- Al Amri, A. Y., Osman, M. E., & Al Musawi, A. S. (2020). The effectiveness of a 3D-virtual reality learning environment (3D-VRLE) on the Omani eighth grade students' achievement and motivation towards physics learning. *International Journal of Emerging Technologies in Learning (IJET)*, 15(05), 4-16. <https://doi.org/10.3991/ijet.v15i05.11890>
- Arias, M., Creus, C., Gascon, A., & Godoy, G. (2011). Learning theory through videos - a teaching experience in a theoretical course based on self-learning videos and problem-solving sessions. *Proceedings of the 3rd International Conference on Computer Supported Education*, 93–98. <https://doi.org/10.5220/0003333400930098>
- Asrori, Nunuk Suryani, & Nur Arifah Drajadi. (2021). Development of animation video on youtube channels as an alternative learning media during the covid-19 pandemic. *JTP - Jurnal Teknologi Pendidikan*, 23(3), 285–294. <https://doi.org/10.21009/jtp.v23i3.23679>
- Ayatullah, A. (2018). Upaya meningkatkan motivasi dan hasil belajar siswa pada mata pelajaran pendidikan agama islam menggunakan metode demonstrasi dan media nyata pada kelas IV SDN 3 Sepit Tahun Pelajaran 2017/2018. *FONDATIA*, 2(2), 61–82. <https://doi.org/10.36088/fondatia.v2i2.127>
- Boelens, R. V. ., & De Wever, B. (2018). The design blended learning in response to student diversity in higher education; Instructor's view and use differentiated. *Photosynthetica*, 2(1), 1–13.
- Brown, K., & Kennedy, H. (2011). Learning through conversation: Exploring and extending teacher and children's involvement in classroom talk. *School Psychology International*, 32(4), 377–396. <https://doi.org/10.1177/0143034311406813>

- Canelos, J., & Catchen, G. (1988). Making abstract engineering course content computer generated graphics and video tutorials: The development process. *Proceedings Frontiers in Education Conference*, 297–301. <https://doi.org/10.1109/FIE.1988.34997>
- Fitrianingsih, Y. (2019). Development of mathematics comic learning media for students of class VII SMP/MTs based on culture. *Jurnal Petik*, 5(2), 36–42. <https://doi.org/10.31980/jpetik.v5i2.567>
- Gao, Y. (Lisa), Wu, L., Shin, J., & Mattila, A. S. (2020). Visual design, message content, and benefit type: the case of a cause-related marketing campaign. *Journal of Hospitality & Tourism Research*, 44(5), 761–779. <https://doi.org/10.1177/1096348020911444>
- González-Domínguez, J., Sánchez-Barroso, G., Zamora-Polo, F., & García-Sanz-Calcedo, J. (2020). Application of circular economy techniques for design and development of products through collaborative project-based learning for industrial engineer teaching. *Sustainability*, 12(11), 4368. <https://doi.org/10.3390/su12114368>
- Imbeau, M. B., & Tomlinson, C. A. (2013). *Managing a differentiated classroom. Breaking the mold of classroom management: what educators should know and do to enable student success*, R&L Education.
- Jaekel, A.-K., Scheiter, K., & Göllner, R. (2021). Distance Teaching During the COVID-19 Crisis: Social Connectedness Matters Most for Teaching Quality and Students' Learning. *AERA Open*, 7, 2332858421110520.
- van den Akker J, Bannan, B., Kelly, A. E., Nieveen, N., & Plomp, T. (2013). Educational design research part (A): An introduction. *Enschede: Enschede, the Netherlands: Netherlands Institute for Curriculum Development (SLO)*.
- Kay, R., & Kwak, J. Y. (2018). Comparing types of mathematics apps used in primary school classrooms: an exploratory analysis. *Journal of Computers in Education*, 5(3), 349–371. <https://doi.org/10.1007/s40692-018-0109-x>
- Lee, U., Han, K., Cho, H., Chung, K.-M., Hong, H., Lee, S.-J., Noh, Y., Park, S., & Carroll, J. M. (2019). Intelligent positive computing with mobile, wearable, and IoT devices: Literature review and research directions. *Ad Hoc Networks*, 83, 8–24. <https://doi.org/10.1016/j.adhoc.2018.08.021>
- Ljubojevic, M., Vaskovic, V., Stankovic, S., & Vaskovic, J. (2014). Using supplementary video in multimedia instruction as a teaching tool to increase efficiency of learning and quality of experience. *International Review of Research in Open and Distance Learning*, 15(3), 275–291. <https://doi.org/10.19173/irrodl.v15i3.1825>
- Loizou, E. (2017). Towards play pedagogy: supporting teacher play practices with a teacher guide about socio-dramatic and imaginative play. *European Early Childhood Education Research Journal*, 25(5), 784–795. <https://doi.org/10.1080/1350293X.2017.1356574>
- Luo, F., Antonenko, P. “Pasha,” Valle, N., Sessa, E., Burleigh, G., Endara, L., McDaniel, S., Carey, S., & Davis, E. C. (2020). Collaborative design reasoning in a large interdisciplinary learning tool design project. *International Journal of Designs for Learning*, 11(1), 85–97. <https://doi.org/10.14434/ijdl.v11i1.25633>
- Novita, L., Sukmanasa, E., & Pratama, M. Y. (2019). Penggunaan media pembelajaran video terhadap hasil belajar siswa SD. *Indonesian Journal of Primary Education*, 3(2), 64–72. <https://doi.org/10.17509/ijpe.v3i2.22103>
- Nurhayati, L. (2014). *Penggunaan Model Pembelajaran berbasis lingkungan untuk meningkatkan kreativitas dan hasil belajar IPA siswa kelas XI SMK Negeri IV Cilegon Tahun Pelajaran 2013/2014*. [Doctoral Dissertation], Universitas Sultan Ageng Tirtayasa.
- Olson, T. M., & Wisher, R. A. (2002). The effectiveness of web-based instruction: An initial inquiry. *International Review of Research in Open and Distributed Learning*, 3(2), 1-17. <https://doi.org/10.19173/irrodl.v3i2.103>
- Paradise, P., & Wibowo, M. (2021). Pengembangan learning management system (LMS) dengan menerapkan video based learning dan gamification dalam meningkatkan motivasi dan keterlibatan mahasiswa. *Jurnal Media Informatika Budidarma*, 5(3), 929-936. <https://doi.org/10.30865/mib.v5i3.3087>
- Räisänen, M., Postareff, L., & Lindblom-Ylänne, S. (2016). University students' self- and co-regulation of learning and processes of understanding: A person-oriented approach. *Learning and Individual Differences*, 47, 281–288. <https://doi.org/10.1016/j.lindif.2016.01.006>
- Ramadhani, M. A., Adlim, A., & Hanum, L. (2022). Development of Tutorial Video for Palm Oil Waste Treatment in the Subject of Workshop and Entrepreneurship. *Chimica Didactica Acta*, 8(1), 1–6. <https://doi.org/10.24815/jcd.v8i1.25245>
- Reksiana, R. (2022). Implementasi Model R2d2 (Recursive, reflective design and development model) dalam pembelajaran. *MISYKAT Jurnal Ilmu-Ilmu Al-Quran Hadist Syari Ah Dan*

- Tarbiyah*, 7(2), 137-145.
<https://doi.org/10.33511/misykat.v7n2.137-145>
- Ruys, I., Defruyt, S., Rots, I., & Aelterman, A. (2013). Differentiated instruction in teacher education: A case study of congruent teaching. *Teachers and Teaching: Theory and Practice*, 19(1), 93–107.
<https://doi.org/10.1080/13540602.2013.744201>
- Saido, G. ., Siraj, S., Nordin, A. ., & Al-Amedy, O. . (2018). Higher order thinking skills among secondary school students in science learning. *IEEE Transactions on Antennas and Propagation*, 66(9), 4936–4941.
<https://doi.org/10.1109/TAP.2018.2845550>
- Soomro, S. A., Casakin, H., & Georgiev, G. V. (2022). A Systematic Review on FabLab Environments and Creativity: Implications for Design. *Buildings*, 12(6), 804.
<https://doi.org/10.3390/buildings12060804>
- Spector, J. ., Merrill, M. ., Elen, J., & Bishop, M. . (2014). *Handbook of research on educational communications and technology: fourth edition. fourth ed.* Springer.
<http://dx.doi.org/10.1007/978-1-4614-3185-5>
- Suryansyah, T., & Suwarjo. (2016). Pengembangan video pembelajaran untuk meningkatkan motivasi dan hasil belajar kognitif siswa kelas iv sd. *Jurnal Prima Edukasia*, 3(2), 209–221.
- Tembrevilla, G., & Milner-Bolotin, M. (2019). Engaging physics teacher-candidates in the production of science demonstration videos. *Physics Education*, 54(2), 025008.
<https://doi.org/10.1088/1361-6552/aaf95d>
- Tomlinson, C. A., Brighton, C., Hertberg, H., Callahan, C. M., Moon, T. R., Brimijoin, K., Conover, L. A., & Reynolds, T. (2003). Differentiating instruction in response to student readiness, interest, and learning profile in academically diverse classrooms: A review of literature. *Journal for the Education of the Gifted*, 27(2–3), 119–145.
<https://doi.org/10.1088/1361-6552/aaf95d>
- Vasileva-Stojanovska, T., Malinovski, T., Vasileva, M., Jovevski, D., & Trajkovik, V. (2015). Impact of satisfaction, personality and learning style on educational outcomes in a blended learning environment. *Learning and Individual Differences*, 38, 127–135.
<https://doi.org/10.1016/j.lindif.2015.01.018>
- Wibawa, D. M. S., Dewi, L. J. E., & Nugraha, I. N. P. (2021). Pengembangan media pembelajaran audio visual berbasis powtoon mata pelajaran sistem refrigerasi bagi siswa SMK. *Jurnal Pendidikan Teknik Mesin Undiksha*, 9(2), 89–99.
<https://doi.org/10.23887/jptm.v9i2.27598>
- Wisada, P. D., Sudarma, I. K., & Yuda S, A. I. W. I. (2019). Pengembangan media video pembelajaran berorientasi pendidikan karakter. *Journal of Education Technology*, 3(3), 140.
<https://doi.org/10.23887/jet.v3i3.21735>
- Wu, H., Chen, C., Hou, J., Liao, L., Wang, A., Sun, W., Yan, Q., & Lin, W. (2022). Fast-vqa: efficient end-to-end video quality assessment with fragment sampling. *Lecture Notes in Computer Science (Including Subseries Lecture Notes in Artificial Intelligence and Lecture Notes in Bioinformatics)*, 13666 LNCS, 538–554.
https://doi.org/10.1007/978-3-031-20068-7_31
- Yang, J., Zhang, D., Liu, X., Hua, C., & Li, Z. (2022). Destination endorsers raising on short-form travel videos: Self-image construction and endorsement effect measurement. *Journal of Hospitality and Tourism Management*, 52, 101–112.
<https://doi.org/10.1016/j.jhtm.2022.06.003>
- Yang, K., & Shi, Z. (2022, May). Efficient learning assistance strategies to improve learning efficiency when online learning video quality degradation occurs. In *2022 4th International Conference on Computer Science and Technologies in Education (CSTE)* (pp. 194-197). IEEE.
<https://doi.org/10.1109/CSTE55932.2022.00042>
- Zachariades, T., Christou, C., & Pitta-Pantazi, D. (2013). Reflective, systemic and analytic thinking in real numbers. *Educational Studies in Mathematics*, 82(1), 5–22.
<https://doi.org/10.1007/s10649-012-9413-y>