



Development of Mini Cinema Digital Media in Science Learning on the Material of my Region, my Pride in Class V of Kerokan Elementary School

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Abstract: This study aims to develop media, test the feasibility, and determine the effectiveness of mini cinema digital media, in the subject of science, my proud region. This mini cinema digital media is a media that refers to the concept of utilizing space or audiovisual devices that will later display videos or films, and other audiovisual materials to support learning. This study uses development research or R&D (Research and Development) which uses the ADDIE (Analysis, Design, Development, Implementation, Evaluation) model. In the subject section for this research data, 24 students of grade V of Kerokan Elementary School, Temanggung Regency were used. The data collection techniques used were media expert validation questionnaires, material expert validation questionnaires, student response questionnaires and teacher response questionnaires. With the results of media expert validity based on media expert assessments of 88% and material expert validation of 84% with the category "very feasible". Then based on the student response questionnaire 91% with the category "Very Effective" and the results of the teacher response questionnaire of 93% with the category "Very Feasible". With the conclusion that the development of mini cinema media in the learning of science subjects on the topic of my proud region in class V of Kerokan Elementary School, Temanggung Regency is very feasible and very effective to use.

Keywords: Digital media; Mini cinema; My pride; My region; Science learning

Introduction

Education is a means for everyone to be able to feel and gain knowledge without exception because everyone has the right to get a decent education and according to their level of development. In general, the reference for education is on its legal basis, namely Pancasila, then the Constitution Article 31 of Law No. 20 of 2003 which discusses the national education system (SISDIKNAS) and also other laws and regulations that support education in Indonesia. After that, this legal basis becomes a reference and provision regarding the implementation of education in Indonesia as it should be. Then there is a curriculum that is also a concern for

all elements of education and there is a Decree of the Minister of Education, Culture, Research and Technology no. 262/M/2022 discussing changes to Ministerial Decree no. 56/M/2022 which discusses guidelines for implementing the curriculum in the context of learning recovery, for the independent curriculum in early childhood education, elementary education, and secondary education. In this case, the curriculum which was originally KTSP has now been changed and standardized into an independent curriculum, in which all learning implementations are replaced with themes and one of the subjects that has also been replaced is Science and Social Sciences which in the independent curriculum are combined and

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become Natural and Social Sciences or IPAS. Making these two learning must be divided according to teacher policy (Yunaini et al., 2022; Nurhidayati et al., 2024).

According to Dwivedi et al. (2022), Pohl et al. (2021), and Zhan et al. (2023) the integration of Science and Social Sciences will later aim to develop a more holistic, contextual, and multidisciplinary Indonesian education system. The purpose of combining these two subjects is so that in the future students can understand the many cultures, histories, and social systems that will always be related to the natural and social conditions in a particular area. The IPAS subject contains learning or discusses all elements of nature and society or science and social, which still includes several discussion topics regarding nature, environment, geography, technology, history, and culture (Suharso et al., 2019; Bichler, 2023; Höfele et al., 2022). Furthermore, science is a discipline that is obtained from a scientific attitude or experiment, the process is a scientific process, then formulated into a skill and will become a product (Vázquez-Villegas et al., 2023; Fahmidani & Rohaeti, 2020; Kelana et al., 2022).

This product can be in the form of concepts, principles, theories, laws, which in the next stage can be used as a basis for the occurrence of the next concept, principle, law, and theory (Hogan & O'Flaherty, 2022; Emden, 2021). While social studies is a discipline that is designed based on social science or activities whose purpose is to educate and equip students to be able to develop thinking concepts based on social realities that exist in the scope of social life in society, which will make good and responsible citizens (Granados-Sánchez, 2023; Gu, 2024). In this case, the research focuses on the social studies subject group with the main material being the material "My Region, My Pride". It is a material that will study about how Indonesian cultural heritage is also part of Indonesian History. The word history comes from the Arabic word "syajaratun" (read: syajarah) which means tree. The word history is used in everyday Indonesian and is chosen as a term. History does not only mean a tree, in the sense of "family tree" also does not only mean descent, origin and genealogy (Baan et al., 2022; Sepie, 2017).

However, if we study history, at least we certainly study descent, origin and genealogy (syajarah an-nasab). At a glance we have followed the meaning of the word history reviewed from an etymological perspective, which describes the nature of a tree. However, it is not intended that history is biologically; growing, developing, bearing fruit or not and finally dying, really like a tree. History does grow, develop and move continuously and will continue to run without stopping throughout time. We can conclude that the word history is used as a word in our everyday language and a scientific term (Darling-Hammond et al., 2020). History

means a story or event or incident that really happened or took place in the past. In grade V students of Kerokan Elementary School, there are still many scores that do not meet the target in the social studies subject, especially the material "My Region, My Pride". Most of them actually know some cultural and historical heritages, especially those from their region, but they do not understand the history of other regions or Indonesian History. More precisely because history if not understood then it will be difficult to memorize. So actually students only need the right learning media so that memories about culture can be understood well (Kim et al., 2022; Daryanes et al., 2023).

Method

This research is a type of Research and Development (R&D) research, which will focus on the development of a media. Syaodih (2005) explains that Research and Development (R&D) research is a type of research with steps, namely the development of a new product or it can also be by perfecting an existing product and can be accounted for. Meanwhile, according to Budiyono (2017) the definition of the Research and Development (R&D) method is a research approach that produces a product that focuses on a particular field of expertise, which is also accompanied by certain by-products, and can have the benefits of the effectiveness of the product being developed. With this, this study uses the ADDIE model, which is (Analysis, Design, Development, Implementation, Evaluation). According to Dick et al. (2005) in Maydiantoro (2021), the development of the ADDIE model uses five stages:

Analysis

In the ADDIE development research model, the first stage is to analyze the need for new product development (models, methods, media, teaching materials) and analyze the feasibility and requirements for product development. The development of a product can be initiated by a problem in an existing/implemented product. Problems can arise and occur because the existing or available product is no longer relevant to the needs of the target, learning environment, technology, characteristics of students and so on.

Design

Design activities in the ADDIE development research model are a systematic process that starts from designing the concept and content in the product. The design is written for each product content. Instructions for implementing the design or making the product are attempted to be written clearly and in detail. At this

stage, the product design is still conceptual and will underlie the development process in the next stage.

Development

Development in the ADDIE development research model contains the activities of realizing the product design that was previously made. In the previous stage, a conceptual framework for implementing a new product has been prepared. The conceptual framework is then realized into a product that is ready to be implemented. At this stage, an instrument is also needed to measure product performance.

Implementation

The implementation of the product in the ADDIE development research model is intended to obtain feedback on the product that is being created. Initial feedback (initial evaluation) can be obtained by asking questions related to the objectives of product development. Implementation is carried out referring to the product design that has been created.

Evaluation

The evaluation stage in the ADDIE model development research is carried out to provide feedback to product users, so that revisions are made according to the evaluation results or needs that have not been met by the product. The ultimate goal of the evaluation is to measure the achievement of development objectives. This interactive mini cinema media development research was carried out in class V of Kerokan Temanggung Elementary School, in the even semester of the 2024/2025 academic year. The types of data used in this study are data from the results of the assessment of the feasibility of mini cinema digital media to test the feasibility of the media applied, the results of the assessment of the skills of class V students of Kerokan Elementary School, Temanggung Regency in understanding material related to IPAS chapter 7 my proud region to test the effectiveness of mini cinema digital media in learning, and photo documentation of learning activities in class V. With data analysis techniques for expert validators of media and materials, it will be processed using a Likert scale. With the following score percentages:

$$NP = \frac{R}{SM} \times 100\%$$

(1)

Description: NP = Percentage value; Score obtained; SAME = ideal score.

Table 1. Expert Validator Assessment Criteria

Eligibility Percentage (%)	Category
>75 – 100	Very Eligible
>50 – 75	Eligible
>25 – 50	Less Eligible
0 – 25	Very Uneligible

While the feasibility analysis for student responses and teacher responses Percentage of learning media feasibility after the average percentage is obtained, the next step is to do a predicate based on the rating scale measurement scale. The use of a rating scale to change data in quantitative form into data in qualitative form. With a rating scale, raw data in the form of numbers is then interpreted in a qualitative sense.

$$\text{Eligibility Percentage (\%)} = \frac{\text{score obtained}}{\text{Maximum score}} \times 100\%$$

(2)

Table 2. Percentage of Learning Media Eligibility

Eligibility Percentage (%)	Category
>75 – 100	Very Eligible
>50 – 75	Eligible
>25 – 50	Less Eligible
0 – 25	Very Uneligible

Result and Discussion

The development of Mini Cinema digital media in the learning of science on the material of my proud region uses the ADDIE development model which consists of 5 stages, namely: Analysis, Design, Development, Implementation, and Evaluation.

Analysis

Based on the results of observations and interviews conducted at Kerokan Elementary School, Temanggung Regency, information was obtained that there was still a lack of student motivation, as well as the less than optimal use of educational resources which was indicated by the lack of use of creative and innovative learning media (Li et al., 2022; Mishra, 2017). Then for the analysis of the material, it can be concluded that students are less able to understand the contents of the material of my proud region if the material is too much (Polyportis et al., 2022; Malaeb & Ware, 2023). Some information was also obtained regarding the facilities and also the availability of supporting learning infrastructure, including the following:

Table 3. School Facilities and Environment

Facilities	No Facilities Number and Condition
LCD/Projector	1. LCD/Projector 2 good
Speaker	2. Speaker 2 good
Chromebook	3. Chromebook 6 good
Wifi network	4. Wifi network Good

Facilities	No Facilities Number and Condition
Electricity	5. Electricity Good

Design

There are several stages that researchers do to design and design this Mini Cinema digital media:

Designing a Storyboard

The first thing researchers do is design a storyboard that is used to summarize the pages in the video, and provide some information about what will be contained in it. In addition, according to Kunto et al. (2022) this storyboard is one of the stages of the procedure carried out by learning media developers, namely using a storyboard. Making this storyboard will later make it easier to create and develop the desired media in development research.

Compiling Media Assessment Instruments

Compiling assessment instruments to assess the media or products being developed. Later, the instrument will be used to assess the results of the product validity test by a media expert validator to assess the feasibility of the Mini Cinema digital media being developed. The instruments whose validity was tested were: Media Expert Validation Instrument, Student Response Questionnaire Instrument for Mini Cinema Digital Media, and (Teacher Response Questionnaire Instrument for Mini Cinema Digital Media.

Compiling Learning Modules

Compiling the Learning Module for Social Sciences Chapter 7 My Region My Pride Topic A: What is my regional culture like? Aims to direct learning activities in the classroom that are integrated with the implementation of Mini Cinema digital learning media. The modules that have been compiled are attached.

Compiling Material Assessment Instruments

Compiling assessment instruments to assess the suitability of the material to be studied, as well as the suitability between learning achievements, learning objectives, and the design of learning activities to be implemented. Later, the instrument will be used to assess the results of the material validity test by the material expert validator to assess the feasibility of the Social Sciences Chapter 7 My Region My Pride material on Topic A: What is my regional culture like? The instrument whose validity was tested was the Material Expert Validation Instrument.

Development

At this stage, the researcher develops the product or production stage of the Mini Cinema digital media which was originally in the form of a design into a real

form that is in accordance with the storyboard design. The first activity carried out at this stage is to collect materials in making learning media, for example: images related to the material, sound recordings and animations. The images and animations of each slide are developed through the Canva application. Then the researcher does the voice-over by recording the researcher's own voice via audio either from a laptop or cellphone. All the materials that have been collected are then combined with the help of the Canva application, for further downloading.

Initial Display of Mini Cinema Digital Media

At the beginning of the video, the Subject is displayed, then the CHAPTER and the topic of the material to be discussed.



Figure 1. Initial media display

Opening Page Display

This page displays the opening and greeting from the teacher.



Figure 2. Opening page media view

Display of Learning Objectives Presentation



Figure 3. Display of learning objective presentation media

This section contains a presentation of the learning objectives for the material to be studied.

Initial Display of Cultural Heritage History Material

This section displays the historical story of how cultural heritage came to be.



Figure 4. Initial media display of material

Advanced Material Display Types of Cultural Heritage

This page displays advanced material on the History of Cultural Heritage, namely the types of cultural heritage that are divided into two forms, namely: Tangible Cultural Heritage and Intangible Cultural Heritage.



Figure 5. Advanced material media display

Display of Regional Cultural Elements



Figure 6. Display of cultural elements media

This section is a display of regional cultural elements which include: Regional Language, Traditional Clothing, Typical Food, and Traditional Ceremonies.

Display of Video Examples of Cultural Acculturation



Figure 7. Media display example of acculturation

Developer and Mentor Profile Display



Figure 8. Developer & mentor profile view

Credit and Source View



Figure 9. Credit and Source Display

From the results of the media expert validation test as in the table above, it can be concluded that the score obtained was 71, which if the percentage is sought using the formula $NP = R / SM \times 100\%$, will show the result $NP = 71 / 80 \times 100\% = 88\%$. With this percentage, the

media validation category is "very feasible", but with revisions according to suggestions. In addition to media expert validation, the next step is material expert validation. From the results of the material expert validation test as in the table above, it can be concluded that the score obtained was 63, which if the percentage is sought using the formula $NP = R / SM \times 100\%$, will show the result $NP = 63 / 75 \times 100\% = 84\%$. With this percentage, the material validation category is "very feasible", but with revisions according to suggestions.

Implementation

This development research was conducted in class V, so the trial question stage was conducted in a class that had previously received learning about the material of IPAS chapter 7 My Pride, namely class VI of Kerokan Elementary School, Temanggung Regency, with a total of 20 students. The results of the 50 trial questions given to 20 students of class VI of Kerokan Elementary School, the valid questions that could be processed back into the pretest and posttest were 26 questions. Then after being analyzed from the level of interpretation of the validity of the questions, the researcher got 25 valid questions to be used as pretests and posttests.

The next stage is the implementation of a small group media trial conducted in class V of Kerokan Elementary School with a total of 10 students. With the results of the total score of 10 students, namely 365 which after being processed with $NP = R / SM \times 100\%$ as follows $NP = 365/400 \times 100\%$, a feasibility percentage of 91.25% was obtained, indicating that the media category after being tested in small groups was "very feasible". The next stage is the implementation of the implementation in class V of Kerokan Elementary School with 24 students, which in the implementation is carried out according to the module that has been made. Then based on the results of the implementation, the pretest and posttest data were obtained in the form of:

Table 4. Paired t Test Sample

	t	df	Sig.(2-tailed)
Pair 1 Pretest & Posttest	-5.416	23	0.000

Based on the data above, there are several bases for decision making, if the sig. (2-tailed) value <0.05 then it can be concluded that there is a significant difference in the pretest and posttest data, and if the sig. (2-tailed) value >0.05 then there is no significant difference between the pretest and posttest data. So, by looking at the data that the sig. (2-tailed) value is 0.000 which is <0.05 , then there is a significant difference between the pretest and posttest data of the IPAS learning Chapter 7 My Region My Pride using the Mini Cinema digital media.

Table 5. N Gain Test

	N	Min.	Max.	Mean	Std. Deviation
NGain	24	70.73	95.08	83.5904	5.94072
Valid N (listwise)	24				

The data above is the N-Gain result obtained, namely referring to the mean data of 83.59%. Where conclusions can be drawn using the N-Gain effectiveness interpretation category: $<40\%$: Not Effective; $40 - 55\%$: Less Effective; $56 - 75\%$: Quite Effective; $>76\%$: Very Effective. It can be concluded that the Mini Cinema digital media developed in this study is very effective.

Evaluation

The evaluation of the Mini Cinema digital media development research on the IPA learning of my proud region material in class V of Kerokan Elementary School, Temanggung Regency. The first is at the analysis stage where the researcher analyzes student characteristics and learning problems, then materials, and also analyzes the facilities available at the school (Kerimbayev et al., 2023; Amaliyah et al., 2022; Schildkamp, 2019). At this stage, overall the analysis stage is in accordance with the problems at the school (Hardiansyah et al., 2024; Guo et al., 2020; Barrett et al., 2015). For example, the use of media that is still less creative and innovative, also in the use of digital learning media that is not yet optimal because activities use more lecture methods and rarely use digital media, especially LCD/Projectors. Therefore, interesting and digital-based learning media are needed so that the use of school infrastructure can also be maximized, such as the development of Mini Cinema digital media. Then at the design stage, the entire material validation instrument and also the media, then the storyboard and also the teaching module are quite complete. However, there are some things that still need to be improved, for example in the material validation instrument section, there are several criteria that still need to be replaced and the selection of the right language.

In addition, the teaching module that was created still needs some improvements to several elements in it, such as improvements to learning outcomes and learning objectives (Nurhafidhah et al., 2024; Lidyasari et al., 2023; Harris et al., 2019; Rincon-Flores et al., 2024). Furthermore, at the development stage, there are several things that need to be evaluated. Namely in media development, where the first is the improvement in color contrast or the selection of text and background colors (Iveson et al., 2022; Florén et al., 2018; Kjellström et al., 2020), which were originally still lacking in contrast, so a text background is given so that the writing and background do not blend together. In addition,

improvements to the developer profile section which was originally placed at the beginning was replaced at the end before the credits and sources were displayed (Kraus et al., 2022; Markula et al., 2022; Barker et al., 2023).

The last is the logo that originally only listed the Ministry of Education and Culture, changed and added with the Ministry of Education and Culture logo followed by the UNNES logo, both of which are attached along the page during the video. Then for the evaluation of the implementation of the development of Mini Cinema digital media in class V of Kerokan Elementary School, Temanggung Regency, it has been felt to be smooth, both the principal, teachers, and students are very cooperative in helping the smooth implementation of this development research.

Conclusion

This study uses ADDIE model development research, namely analyze, design, development, implementation, and evaluation. With the specifications of developing mini cinema digital media for the material of IPAS chapter 7, my proud region in class V of Kerokan Elementary School, Temanggung Regency, the conclusions are as follows: Based on the formulation of the existing problem, in this development research the product produced is a mini cinema digital learning media, which contains a video containing material according to the IPAS material, my proud region; The validity of the mini cinema digital media based on the assessment of material experts and media experts obtained results, namely in material experts with a percentage of 84% and can be concluded in the very feasible category. While the results of the media expert validation with a percentage of 88% with a very feasible category. The practicality of the mini cinema digital media on the IPAS material chapter 7, My Pride Region which was tested in a small group of class V with a total of 10 students, obtained a percentage result of 91.25% where if based on the media feasibility criteria category, it is said to be very feasible; The effectiveness is indicated by the provision of pretest and posttest during the learning process, showing the results after testing for normality, homogeneity, paired sample T-test, and then accumulated through the N-Gain data results, the percentage is 83.59% which if based on the effectiveness interpretation category criteria is very effective.

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Conflicts of Interest

The authors declare no conflict of interest.

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