Interactive Pictorial Story as Learning Media
for Third Grade Students

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Keywords:	Abstract
Learning media Interactive picture stories Thematic learning	This study aims to develop an interactive pictorial story as a learning media on theme 2 Loving Plants and Animals and to determine its feasibility, practicality, and effectiveness. This study uses the ADDIE model (Analysis, Design, Development, Implementation, and Evaluation). In this study, the results obtained include: (1) The feasibility of the media obtained from the validation results by 5 validators obtained an average of 0.83 for content quality indicators and objectives, instructional quality indicators obtained an average of 0.84 and technical quality indicators obtained an average of 0.83. The average number of all indicators is 0.83 with the category "very valid". (2) The practicality of the media obtained a percentage of 98% in the "very feasible" category of teacher responses and 96% in the "very feasible" category of student responses. (3) The effectiveness is calculated by using the gain test of 0.56 indicating an increase in student learning outcomes in the "medium" category. The result of this research can be a reference to understand that an interactive pictorial story will be a big help for teachers in conducting an interesting teaching and learning process, especially during this pandemic. The pictorial story was created in an interactive format, so students can learn the material in a fun and interesting way. Besides, in this outbreak, students need to have a technology-based learning resource other than their school books so they can study independently.

INTRODUCTION

Background

Learning media is a tool used to assist in delivering the lesson material and a way to improve the quality of learning. "Learning media is used to streamline communication and interaction between teachers and students in the learning process at school" (Kusumadewi, 2017, p. 192). That is why a good learning process must always use suitable learning media. Therefore, various kinds of learning media can be used as a tool in delivering and facilitating

students in receiving lesson materials. By using learning media, the effectiveness and activeness of students in learning can be improved, and it can create more varied learning activities.

The use of learning media that is selected to be used as a tool in delivering lesson materials must be suitable and appropriate, so the learning concepts can be more easily understood and last longer in students' memories. In addition, the use of learning media must attract students to be more enthusiastic. Teachers must also create a situation that involves students taking an active role. Besides, the results of students' learning experiences will be more embedded and meaningful because students have built their knowledge from their experiences using appropriate learning media.

Based on the research, it can be seen that in thematic learning, the use of media has not been maximized so teachers need communication tools in the form of interactive multimedia that are interesting and motivates the students (Hernaningtyas et al., 2014, p. 3). Elementary students who still have a concrete mindset, especially those who are still in the lower class, are considered suitable for using this interactive multimedia. Interactive multimedia can be utilized to help the teachers in delivering learning materials and increase students' interest.

Other research shows that teachers have not utilized learning media, especially multimedia in learning activities (Diputra, 2016; Pangestika, 2018). The teacher's role in delivering material requires specific learning media, especially those involving computer devices, which can display screens, videos, images, and sound at once so it can accommodate the delivery of learning materials according to the theme.

Problem of Study

The lack of use of media in the process of delivering learning materials in elementary schools causes some difficulties for students to understand the material and makes students less enthusiastic in participating in monotonous learning. This is what happened in the third grade of SDN 01 Kecapi where the learning process still rarely involves learning media, especially in multimedia format. Teachers teach only by using student books, teacher books, and worksheets. Students pay attention to the teacher's explanation then there will be assignments they should conduct individually or in a small group. This causes a reversed condition where the teachers are more active than the students, whereas K13 demands students to be more active in learning. The third-grade teacher emphasized that the use of media was rarely utilized because of the limitation of the school facility.

The use of learning media, especially multimedia, has a very important role in the delivery of learning materials. Students are rarely able to concentrate and pay attention to the teacher's explanation fully, so the learning process will not be optimal. Teachers need suitable learning media, especially interactive ones to help and make it easier to deliver learning materials. Interactive multimedia is also appropriate for elementary school students because it can increase student interest in learning so the learning process will be more meaningful.

Interactive multimedia can contain real information, can be heard, seen, and operated, so it is very effective to assist in delivering learning materials. Teachers must be able to follow technological developments involved in the educational field (Al Fatah et al., 2019, p. 20) considering its rapid progress. One of the learning media that is interesting for students is digital pictorial stories. A pictorial story is a unified story accompanied by interesting pictures following the content of the narration that serves as an explanation, decoration, and support for the storyline to facilitate the process of understanding the content (Kusumaningtyas & Listianingsih, 2017, p. 74). With this, students will not be bored because they will be able to imagine through the pictures while reading the story. This

pictorial story can be a suitable medium to deliver any lesson and applied in all classes because the stories can be developed based on the lesson materials of a certain grade.

Moreover, pictorial stories will be more useful for students if they are developed into interactive multimedia. Interactive multimedia is a combination of various media such as text, images, audio, video, and animation that are interactive and useful in delivering information (Nopriyanti & Sudira, 2015, p. 224). With the use of interactive picture stories, especially if it is completed with a quiz to test the students' comprehension, they will find it easier to learn in a fun way.

State of the Art

Several studies regarding the development of the pictorial story as a learning medium have been carried out quite a lot. Based on that, there is a fact that pictorial stories are proven to be able to increase student's interest and reading skills, so they can help teachers in the process of delivering learning materials properly, and then learning objectives can be achieved successfully (Kurniawati & Koeswanti, 2020; Tarigan, 2018). There is research about the development of pictorial stories, which the fires one was conducted by Agnes Andriyani in 2017 from Universitas Sanata Dharma Yogyakarta who developed environmental education-based pictorial stories for grade III SD Kanisius Wirobrajan 1 through validation conducted by one expert, one grade III elementary school teacher, and third graders students (Andriyani, 2017).

Second, it was conducted by Erlita Nugrahaningtyas in 2018 from the same university who created a pictorial storybook as a medium for learning healthy lifestyles for first graders. The research was validated by one expert lecturer as well as a class teacher (Nugrahaningtyas, 2018). In addition, another study was also conducted by Sri Rahmawati in 2018 from Raden Intan State Islamic University, Lampung, who also developed a pictorial storybook based on a whole language approach to learn folklore for fifth grade SD/MI (Rahmawati, 2018).

Of those three studies, they are related to this research because all of it is research about developing pictorial stories. However, there are some differences, such as this study focused more on interactive picture stories in learning theme 2 "Love Plants and Animals" for Grade III Elementary School. This research has been adapted to what students need to help and facilitate students' learning so that they can improve their abilities and understanding in learning and this can be utilized to help students in teaching during the pandemic.

Gap Study & Objective

Reviewing several previous studies that have been carried out, the novelty of the pictorial story as a learning medium in this study is the combination of the stories with interactive multimedia so it will take advantage of technological developments in education. Before, pictorial stories are usually printed as a book, but now, with the help of technology, picture stories are developed into digital forms. This interactive pictorial story contains a theme with four different picture stories which represent the four sub-themes. One of the themes that can be conveyed using an interactive pictorial story is theme 2 in the third grade: Loving Plants and Animals. In that theme, students will learn about how to love plans and animals by linking the stories with their real experiences.

Therefore, the purpose of this study was to determine the feasibility of interactive pictorial stories as a learning media in learning theme 2: Love Plants and Animals, and also to find out the practicality and the effectiveness of the media for third-grade elementary school students.

METHOD

Type and Design

This study used is a research and development (R&D) method. In the field of education, R&D is a research method used to develop or validate certain products utilized in the learning and education process (Hanafi, 2017, p. 130). The model was ADDIE. According to Branch (Cahyono, 2017, p. 4), ADDIE stands for Analysis, Design, Development, Implementation, and Evaluation.

The analysis is the initial stage that includes needs analysis, student analysis, and material analysis to adapt the media to the needs, the characteristics of the students, and the learning materials. The second is the Design which contains the preparation of materials, the selection of the formats, and the initial design of the media. Next, Development is the step to produce media. At this stage, the media that has been determined is created, then the validation process is carried out to assess the feasibility aspect of the media and revise the media if there is still any part of it that does not meet the criteria. Furthermore, in the implementation stage, there are two processes: conducting pre-test and media testing. Finally, the last phase is Evaluation. At this stage, teachers and students fill a questionnaire out and a post-test is carried out by the students to obtain data conclusions regarding the practicality and effectiveness of the media.

Data Collection

The research was conducted at SDN 1 Kecapi in the first semester of the 2020/2021 academic year. The subjects of this study were the teachers and 15 students of the third grade. The data collection techniques used were questionnaires and tests. The questionnaire was used by the validators to validate the research instruments, and by teachers to determine the feasibility of the media, as well as the response to the media. The tests were used as pre-test and post-test were conducted to find out the effectiveness of the media on students' comprehension.

RESULT AND DISCUSSION

The results of the research on the development of this media are divided into five points, according to the five stages of ADDIE: analysis, design, development, implementation, and evaluation.

Analysis

The analysis is the stage used to analyze the needs in the development of the interactive pictorial story as a learning medium.

a. Need analysis

   Through interviews conducted with the third-grade teachers related to the lack of the use of learning media in delivering learning materials to the students, it can be concluded that the teachers need an interesting and innovative learning media to facilitate the students to comprehend the materials. So, it is necessary to develop an interactive pictorial story as a learning medium to help the students, especially on comprehending the theme 2 Loving Plants and Animals.

b. Student analysis

   Student analysis was conducted by interviewing the teachers at SDN 1 Kecapi because the students must have different characteristics in understanding

the learning material. They tend to be more interested and excited if they learn through visual things such as when the teacher displays pictures or videos.

c. Material analysis

The material that will be used in the development of interactive picture story learning media is on the theme 2 Loving Plants and Animals for grade III elementary students. This theme teaches students how to be careful, live peacefully side by side with other beings. This is a perfect example of lessons that can be taught by using a pictorial story.

Design

Based on the analysis process, it is necessary to develop an interactive pictorial story as a learning medium. So, the next stage is to make a design of the product. This design stage contains several things:

a. Material development

The material that will be used in developing an interactive pictorial story is adjusted to the core competencies (KI) and basic competencies (KD) in theme 2 which is focused on the content of learning Indonesian, Mathematics, and Civics. The material is put together and delivered in a pictorial story. The materials focused on:

Table 1. The Content of Theme 2: Loving Plants and Animals

Competencies	The content
Civics	- Experience in expressing gratitude
	- The importance and the kinds of good attitude
Indonesian	- How to take care of plants
	- How to take care of animals
Mathematics	- Commutative in addition
	- Commutative in multiplication
	- Fractions

b. Choosing the format

The selection of the format of the interactive pictorial story is tailored to the needs of teachers and students, attractively designed, and expected to be easy to use. The details of the format in the interactive pictorial story include:

1) In delivering the material, it will include the combination of pictures and text;
2) The test will be multiple choices with four options (a, b, c, d);
3) The media will be accessed offline (without needing an internet connection);
4) The media presentation format is in the form of an application;
5) The font used is Baar Metanoia.

c. Initial design

The interactive pictorial story is designed according to a predetermined format and created using Adobe Flash CS6 application. The stories and pictures were developed based on the materials of theme 2: Loving Plants and Animals. The media is presented in the form of applications, so it can be a manifestation of utilizing technology in education.

Development

This development stage produces a draft as a result of the design, and then tested and validated it to the specified validator. At this phase of development, the media will be validated to determine the feasibility and revised the product as validators advised.

a. Creating the media

Creating the media was conducted following a predetermined format. The parts of the interactive pictorial story are (1) Front cover display, (2) Main menu display, (3) Instruction display, (4) KI and KD display, (5) Developer profile display, (6) Pictorial story menu display, (7) The first sub-theme-based pictorial story display, (8) The second sub-theme-based pictorial story display, (9) The third sub-theme-pictorial story display, (10) The fourth sub-theme-pictorial story display, (11) Evaluation display.

Figure 1. Front Cover Display

Figure 2. Main Menu Display

Figure 3. Instruction Display

Figure 4. Pictorial Story Menu Display

Figure 5. The First Sub-theme-based Pictorial Story Display

Figure 6. The Second Sub-theme-based Pictorial Story Display

Figure 7. The Third Sub-theme-based Pictorial Story Display

Figure 8. The Fourth Sub-theme-based Pictorial Story Display

Figure 9. Evaluation Display

b. Expert Judgement

The interactive pictorial story that has been completed is then validated by 5 validators. In the validation test, there were 14 statements from 3 assessment criteria: the quality of content and objectives, instructional quality, and technical quality. The results of the validation test obtained from five validators were calculated using the Aiken's V formula with details of each indicator:

Table 2. The Recapitulation of the Validation Result

Indicators	Sub-indicators	Validation result	The average of each indicator	The average of all
The quality of content and objectives	1	0,9		
	2	0,9		
	3	0,8	0,83	
	4	0,75		
	5	0,8		
The instructional quality	6	0,8		
	7	0,95		
	8	0,75	0,84	0,83
	9	0,85		
The technical quality	10	0,75		
	11	0,9		
	12	0,85	0,83	
	13	0,8		
	14	0,85		

The minimum feasibility for the media is <0.41. The average number of all indicators is 0.83 with the category "very valid" which means that the interactive pictorial story is feasible with the revisions suggested by the validators.

c. Revision

The results of the validation process by five validators also contain suggestions to revise the media to make it more suitable as a learning media. The advice includes (1) increasing the font size and adjusting the font, (2) using effective sentences and adjusting the EBI (*Ejaan Bahasa Indonesia)*, (3) adding a new page to the developer profile menu for the drafting team that includes supervisors 1 and 2, validators, as well as illustrators.

Implementation

The implementation was carried out in the third grade of SDN 1 Kecapi with a total of 15 students. This stage is carried out according to a predetermined schedule. The schedule for the application of interactive picture story learning media is described as follows:

Table 3. The Schedule to Implementing the Media

Day, Date	Activity
Tuesday, 11 August 2020	Pretest & First treatment
Wednesday, 12 August 2020	Second treatment
Thursday, 13 August 2020	Third treatment
Friday, 14 August 2020	Posttest

a. Pretest

The pretest was conducted to determine the initial of students' comprehension so the researcher could find out changes before and after treatment by using an interactive pictorial story as a learning media.

b. Treatments

The treatments using interactive pictorial story was carried out three times in a row. The treatment was carried out for 15 students with a time of 3 x 35 minutes. From the treatments, the researcher obtained opinions from the students that the media is very interesting, makes them more enthusiastic, and is easy to understand because there are several stories accompanied by good pictures, designs, and music background.

Evaluation

At this stage, a posttest and responses from students and teachers were carried out, and here is the result:

a. Teachers' response

Teachers' response is an evaluation process carried out by the third-grade teachers through an assessment on the response questionnaire sheet. The questionnaire contained 10 statements based on 3 criteria including the quality of content and objectives, instructional quality, and technical quality.

It was obtained that the quality of content and objectives, instructional quality, and technical quality got 95%, 100%, and 100% respectively that all were categorized in the "very practical" category.

The results obtained from filling out the teacher response questionnaire as a whole obtained a score of 49 out of 50 maximum scores with the percentage formula as follows:

$$P = \frac{49}{50} \; x \; 100\% = 98\%$$

From the results, the percentage showed that the media is practical to be used in learning.

b. Students' response

Students' response is an evaluation process carried out by students by filling out the questionnaires after completion of the treatment. There were 10 statements from three criteria including the quality of content and objectives, instructional quality, and technical quality that students must answer.

The results obtained from the student response questionnaire as a whole obtained a total score of 144 out of 150 maximum scores.

$$P = \frac{144}{150} \: x \: 100\% = 96\%$$

It showed that with 96% results, the media is practical to use. It was also obtained that the quality of content and objectives, instructional quality, and technical quality got 93%, 95%, and 100% respectively that all were categorized in the "very practical" category. The results of the practicality test can be seen in Figure 10.
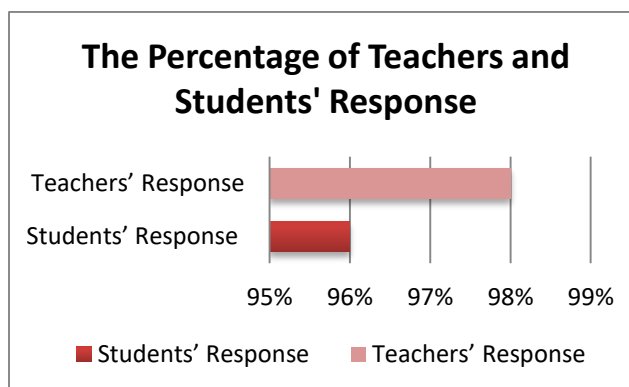

Figure 10. The Graph of Practicality Test

Based on those results, the teachers' and the students' responses showed that this media is practical to use in learning. There was also no advice from the teachers and students to revise the media, but there was a comment from the teachers that the media was good and needed to be developed on other themes.

c. Post-test

The post-test was conducted to determine whether there was a change in students' comprehension, before and after the treatment. Based on the comparison of the results between the pretest and posttest, it was found that there was an increase in the outcomes and even some of them increased significantly.

The effectiveness of the interactive pictorial story as a learning medium can be seen from the increase in students' comprehension of theme 2: Loving Plants and Animals. The results of the pre-test obtained a total value of 93 and the post-test obtained a total score of 125. The effectiveness test was calculated by the Normalized Gain test formula (Sundayana, 2015, p. 151):

$$g = \frac{125 - 93}{150 - 93} = 0{,}56$$

Based on the results above, it is found that the interactive pictorial story was effective in increasing students' comprehension on theme 2: Loving Plants and Animals with the value of 0.56 which is categorized as "medium". There was a similar study (Ariesta & Kusumayati, 2018) in testing the effectiveness of comics media which obtained a gain value of 0.651 with "medium" criteria. The results of the pretest and posttest in this study can be seen in Figure 11.
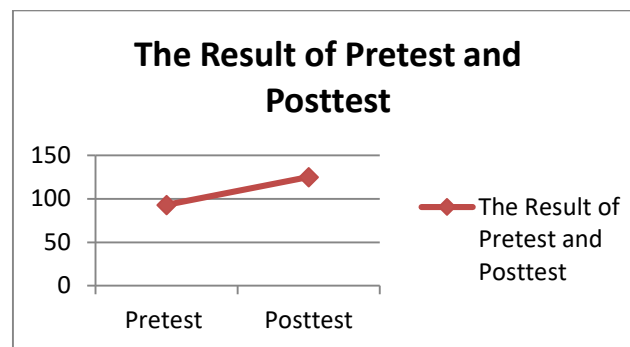

Figure 11. The Graph of Pretest and Posttest Result

The graph above shows the result had increased by 32 points. Even though it is included in the medium category, interactive pictorial story learning media can be said to be "effective" to increase student's comprehension on theme 2: Loving Plants and Animals.

The interactive pictorial story as a learning media created and developed in this study has a distinction that the media contains four pictorial stories with different titles which were developed based on the lesson materials of theme 2. This media can deliver messages to students in a different way because there is an interaction between students and the media. Moreover, this media was designed with a unique graphic form and used bright colors that seem cheerful. In addition to pictures and stories, this media also has quizzes to determine students' comprehension and is accompanied by a music background so it becomes more interesting and fun. The users also do not need the internet to be able to operate it. Besides, it helps children through a fun activity to be able to interact with various characters in the story which can provide a more real and enjoyable experience, and make the learning process better (Monica et al., 2013, p. 4).

However, this media also has a limitation, which took a long time to complete, so the creator needs to spare more time. In addition, the media can only be downloaded and used via a laptop or computer so that if students use it, they must be accompanied by teachers or parents. It is necessary to develop it more to be able to be operated by using smartphones in the next study, so it can be more approachable for teachers and students.

CONCLUSION

Novelty and Contribution

The pictorial story was created in an interactive format, so students can learn the material in a fun and interesting way. Furthermore, this interactive pictorial story has been adapted to what students need and it is created to help students to learn based on the theme. Besides, in this outbreak, students need to have a technology-based learning resource other than their school books so they can study independently.

Limitation and Future Study

This study has several limitations such as been conducted in the middle of Covid-19 outbreak, so the research was only conducted on several third-grade students as the research subject. Moreover, this study only discusses theme 2: Love Plants and Animals for third graders. That is why it can be used as a reference for other researchers to develop the media based on the other themes.

Implication

There are three suggestions concluded based on this research. First, the interactive pictorial story will be a big help for teachers in conducting an interesting teaching and learning process, especially during this pandemic. Second, students need to be accompanied by their teachers or parents in using the interactive pictorial story because the media is only supported by a laptop/computer. Finally, this interactive pictorial story can be used as reference material in other developmental studies.

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