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Development of Comic Learning Media for Fifth Grade Thematic Learning in Elementary School

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Abstarct : This study aims to develop learning media in the form of comics in thematic learning of the Water Cycle material. The research method used is the research and development method of the Borg and Gall model. The research subjects were fifth grade students of 1st State Elementary School Kotabaru Bandar Lampung. The research data were obtained through observation, interviews, questionnaires, and ability tests. Data analysis techniques used descriptive statistics. The results of material expert validation obtained an average score of 3.52 with valid information. The results of media validation obtained an average score of 3.59 with valid information. The results of the user response test show a figure of 84% with very interesting information. The product developed is considered very attractive in terms of the content of the material, the language used, and the overall attractiveness of the design. User response to the developed product shows a percentage of 84% with Good criteria. This shows that the developed product can be used in learning science for the sub-material of Water Cycle in fifth grade students at 1st State Elementary Schoo1 Kotabaru, Bandar Lampung.

Keywords:- Development, Comics, Water Cycle.

I. INTRODUCTION

Learning is a mental activity carried out by someone so that it causes changes in behavior that are different between after learning and before learning. In order to achieve the learning objectives, the learning process must run effectively and efficiently. Educational institutions require changes and developments in terms of models, methods, strategies, and learning media. One thing that needs to be maximized is print media or textbooks that can be used anywhere and anytime, but still have high effectiveness to support student learning outcomes.

However, in practice learning using the lecture method and textbook media as a learning resource is deemed less able to help students understand the concept of the material being taught. In addition, learning using the lecture method and textbook media is considered less attractive to students. This affects student learning outcomes. The learning mastery data obtained from the results of the daily test and the second mid-semester test for fifth grade students in the 2018/2019 academic year shows that the efforts made by the teacher have not shown optimal results.

The findings in the preliminary study show the learning outcomes in Basic Competence 3.8, namely analyzing the water cycle and its impact on events on earth and the survival of living things, and Basic Competence 4.8, namely making works on water cycle schemes based on information from various sources, getting the lowest score in the Mid-Semester Assessment. compared to other basic competencies.

Table 1. Completeness Criteria for Students' Values for Water Cycle Materials

Class	≤ KKM	≥ KKM	Number of Students
V A	16	8	24
V B	15	11	26

Source: Preliminary Research Documentation (2019)

Based on the results of interviews in the preliminary research conducted by researchers, it is known that the thematic learning of the Hydrological Cycle sub-theme in class V mostly uses the lecture method, reading books, and occasionally asking questions.

When interviews were conducted with students about the media used by the teacher and their interest in the media used, 100% of students stated that the media used were in the form of textbooks. Regarding attractiveness, 62.5% of students stated that learning using printed books was not interesting, 25% said it was not interesting, and 12.5% said it was interesting. Students thought that learning to use thick books was difficult and heavy to carry, besides the explanations given were length also confuses them in understanding the material. Students feel less interested and get bored quickly if the learning process only listens to the teacher explaining and reading textbooks.

Based on the results of interviews of researchers with students regarding the desired learning process, students explained that they were more interested in learning that used more pictures, either in the form of animated images or illustrated stories so that learning was not boring and easier to understand because students were not only asked to imagine, but given a concrete picture.

In order to increase student interest in learning, teachers must be good at creating interesting learning. The use of media in the learning process can increase the attractiveness of students in learning. Learning media is one of the supporting factors to stimulate the thoughts, feelings, attention and

abilities or skills of students so that it can encourage the learning process.

Based on the results of preliminary research conducted on fifth grade students of 1st State Elementary School Kotabaru, it is known that comics as a learning medium have never been used and get the highest percentage of learning media that students are interested in, especially on the Hydrological Cycle material, so it is hoped that the use of comics media can help the learning process. classroom learning to be more effective and efficient.

Table 2. Perceptions of Attractiveness of Learning Media to be Developed

Media	Number of Students	Interested Percentage (%)
Comic	17	70.8
Video	7	29.2
Total	24	100

Source: Preliminary Research Documentation (2019)

Media is an intermediary or messenger from the sender of the message (Azhar Arsyad, 2004). learning media is an effective medium to carry out a well-planned teaching process (Romiszowski in Basuki and Farida, 2001: 12). Syaful Bahri Djamarah and Azwan Zain (2010:121) revealed that learning media is any tool that can be used as a channel for messages to achieve learning objectives. Pursuing from some of the expert opinions above, the media is a means of conveying messages from the source of the message to the recipient of the message that can be used as a communication tool.

In particular, the availability of various learning resources will certainly support the creation of interesting and fun learning conditions for students. One of these learning resources is learning media. Considering the role of learning media is very important in supporting the success of the learning process and motivation as expected, the teacher's full understanding of the importance of learning media as an integral part of the learning process in question.

Learning media can be grouped as follows: (1) visual media, (2) audio media, (3) display media, (4) real experiences and simulations, (5) print media, (6) programmed media, and (7) learning through a computer or Computer Aided Instruction (CAI) (Klasek in Riyana, 2007: 5-7).

In addition to the above functions, Livie and Lentz in Riana (2007: 11) suggest the functions of learning media, namely:
1. Attention function, meaning that visual media is the core, attracts, and directs the attention of the learner to concentrate on the content of the lesson
2. Affective function, meaning that visual media can be seen from the level of enjoyment of the learner when learning to read illustrated texts
3. Cognitive function, which reveals that visual symbols facilitate the achievement of goals in understanding and hearing information
4. Copensatory function, visual media provide context for understanding the text and help learners who are weak in reading to organize information in the text and recall it.

The use of learning media has various benefits in the learning process. Various benefits of learning media have been discussed by many experts, such as Sudjana and Rivai (2010: 2) suggesting the benefits of learning media in the teaching and learning process of students, namely:
1. Learning will attract more students' attention so that it can lead to student learning motivation.
2. Learning materials will have a clearer meaning so that they are better understood.
3. Teaching methods will be more varied, not merely verbal communication through the words of the teacher, so that they do not feel bored.
4. Students do more learning activities because they do not only listen to the teacher's description, but also other activities such as observing, doing, demonstrating and others.

Arsyad (2013: 74) explains that the criteria for selecting media originate from the concept that learning media is part of the overall instructional system. So some of the criteria that need to be considered in the selection of good learning media are as follows:

a. According to Purpose

Learning media should be selected based on the instructional objectives where it would be better if it refers to at least two of the three cognitive, affective and psychomotor domains. This is so that the learning media is in accordance with the directions and does not deviate from the goal. Learning media is also not only able to influence aspects of student intelligence, but also other aspects, namely attitudes and actions.

Appropriately supports material that is facts, concepts, principles, and generalizations.

b. Practical, Flexible and Durable

The selected learning media does not have to be expensive and is always technology-based. Utilization of the environment and something simple but effective will be more effective than expensive and complicated learning media. Simple and easy to use, affordable prices and can last a long time and can be used continuously should be one of the main considerations in choosing learning media.

c. Able and Skilled to Use

Before using the media in the learning process in the classroom, it must be ensured that the teacher is able and skilled in using the media to be used. The value and benefits of learning media are largely determined by how the skills of teachers use these learning media. The skills of using these learning media can also be passed down to students so that students are also able to skillfully use the selected learning media.

d. Target Grouping

In one class there are several heterogeneous study groups. Based on heterogeneous abilities, it is possible that the

use of learning media cannot be generalized, depending on the ability of the student group.

e. Technical Quality

In order to ensure the quality of learning media, the selection of media to be used must meet certain technical quality standards. If the product does not have a special standard, the teacher must be able to determine the standard for the product so that it can be used for learning media.

➢ Definition of Comic

In general, comics are often interpreted as illustrated stories. According to Scout McCloud (in Waluyanto, 2005: 51), comics can have the meaning of juxtaposed images and other symbols (nearby, next to each other) in a certain order, to convey information and achieve aesthetic response from the reader. Comics are actually more than just light and entertaining illustrated stories. Comics are a form of visual communication media that have the power to convey information in a popular and easy to understand way. This is possible because comics combine the power of images and writing, which are strung together in a storyline. information more easily absorbed. The text makes it more understandable, and the flow makes it easier to follow and remember.

➢ Comic Format

Broadly speaking, according to Trimo (in Mariyanah, 2005:25) comics media can be divided into two, namely comic strips and comic books. Comic strip is a form of comics consisting of several sheets of columnar frames published in a daily or magazine, usually followed by a story, while what is meant by comic books is comics in the form of books. The comics used in this study are comic strips because they consist of several sheets of columnar frames which are combined into a single unit. In the context of children's learning media, comics are usually published in a book or inserted in textbooks, but they can still be media to help children understand the material being taught.

II. METHOD

A. Type of Research

The research method to be carried out in this research is research and development or Research and Development (R&D). Research and development is a research model used to produce certain products and test the effectiveness of these products (Sugiyono, 2013: 407). In this study, the research and development of the Borg and Gall model is used with the innovative Direct Instruction method, namely the direct learning method developed combined with the use of learning media.

B. Place and Time of Research

Researchers conducted research and development of learning media in the form of comics in the subject of science theme 8 with the material on the Water Cycle and its Effect on the Environment. The feasibility level of the theme 8 science learning media with the material on the Water Cycle and its Effect on the Environment is known through validation by material experts and validation by media experts.

C. Data Type

The type of data obtained is in the form of qualitative data and then processed quantitatively. Data was collected qualitatively and then converted into quantitative data. Qualitative data that is converted into quantitative data is obtained from a product development assessment questionnaire compiled using a scoring scale, the results obtained are qualitative data.

D. Product Development Stages

There are 10 stages of product development for the Borg and Gall model. These stages can be adapted to the needs of researchers with necessary changes. The research and development stages of the Borg and Gall model were carried out in five stages, namely (1) potential and problems, (2) data collection, (3) product design, (4) design validation, (5) design revision. This is based on Sukmadinata's thinking (Aprilia, 2018: 47) which states that research for the purposes of a thesis or dissertation is a small-scale research so that research can be carried out in simpler stages. The stages of development research that have been changed and will be used by researchers can be represented as follows: (1) Potential and Problems, (2) Gathering Information, (3) Product Design, (4) Design Validation, (5) Design Revision, (6) Product Trial, (7) Final Product Revision

E. Data Collection Techniques

Research and development of learning media for the Natural Sciences Comics Cycle using observation, interviews, questionnaires, documentation, and test techniques.

F. Research Variable

There are two types of variables in this study, namely the independent variable and the dependent variable. It is stated in Sugiyono (2013: 61) "the independent variable is the variable that influences, while the dependent variable is the variable that is influenced". The independent variable in this study is the development of comic-based learning media, while the dependent variable is the increase in thematic learning outcomes of fifth grade students on theme 8, sub-theme 2, water cycle material.

G. Data Analysis Technique

➢ Analysis of Pre-Research Questionnaire Results

The questionnaire was analyzed using a Likert scale, which uses a very positive to very negative scale with an assessment analysis guideline developed for a psychological object (Sumantri, 2015).

Table 3. Questionnaire Scoring Guidelines

No.	Score Statement	Statement Statement	Score
Positive			**Negative**
1	5	Yes	0
2	0	No	5

The questionnaires were analyzed and presented. The percentage results of each component were used to see the opinions or responses of students on each statement. The

average percentage of each question was calculated using the formula:

$$\mu = \frac{\sum Skor\ x\ f}{Skor\ maksimal}\ x\ 100\%$$

Information :

μ : the number of percentages that will be achieved in each alternative answer

f : the number of people who choose the alternative answer

$\sum$ Score : total score obtained

Table 4. Interpretation of Student Response Questionnaire Scores

Achievement Level (%)	Qualification	Qualification Description Student Response	
		Positive Statements	Negative Statements
80 < X ≤ 100	Strongly eligible	Strongly agree	Strongly disagree
60 < X ≤ 80	Eligible	Agree	Disagree
40 < X ≤ 60	Fairly Eligible	Hesitating	Doubtful
20 < X ≤ 40	Less Eligible	Disagree	Agree
0 < X ≤ 20	Not Eligible	Strongly disagree	Storngly agree

➢ Analysis of Expert Validation Instrument Results

Expert validation focuses on the feasibility of the developed learning media. The data from the validation results were analyzed by making an average score for the assessment by experts on the aspect of assessing the feasibility of learning media. By using the formula:

$$\bar{X} = \frac{\sum x}{n}$$

Information :

$\overline{X}$: Average score per assessment aspect

$\sum x$: The score given by the validator

n : Number of validators

Based on the above calculations, a validator response classification table can be compiled as follows:

Table 5. Classification of Validation Response Analysis Based on Average Score Per Indicator

Average	Validation Classification
4,21 ≤ $\overline{x}$ ≤ 5,00	Strongly eligible
3,41 ≤ $\overline{x}$ ≤ 4,20	Eligible
2,61 ≤ $\overline{x}$ ≤ 3,40	Fairly Eligible
1,81 ≤ $\overline{x}$ ≤ 2,60	Less Eligible
1,00 ≤ $\overline{x}$ ≤ 1,80	Not Eligible

➢ User Response Analysis

The user response test was conducted to determine the user's response to the product content aspects, the language used, and the overall attractiveness of the product design. The data used in the attractiveness test was obtained from the user response questionnaire scores for the Air Cycle Comics product. The percentage is calculated through the following steps:

a) Calculating the total score of each indicator (*R*)

b) Calculate the percentage of each indicator with the formula

The formula used to calculate the score of each indicator is:

$$NP = \frac{R}{SM} \text{ x } 100$$

Information :

R : Total score of each indicator

SM : Maximum score of each indicator

(Ngalim Purwanto, 2012: 102)

The quantitative data obtained are then converted into the following classifications:

Table 6. User Response Test Percentage Range

Percentage	Predicate
90 - 100	Very good
70 – 89	Good
50 – 69	Pretty dood
0 – 49	Not good

(Sugiyono, 2015: 69)

III. RESULTS AND DISCUSSION

Stages of Development of the Water Cycle Comic:

1. Introduction

The first stage in conducting research and development is conducting preliminary research to find out the conditions, problems, and potentials that exist in the field. The results of the preliminary research are then used as a reference for carrying out the next stage.

The results of the preliminary research indicate that there are several problems that occur in the thematic learning of class V at 1st State Elementary School Kotabaru Bandar Lampungand the potential that can be developed, as explained in the previous section. Based on the analysis of learner characteristics, conditions, problems, and existing potential, media that is practical, easy to use, attractive to students, easy to understand, and economical is needed.

2. Planning and development

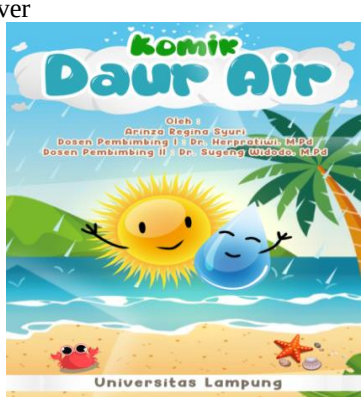
1) Product design planning

Product design planning is carried out by taking into account:

Core Competencies:
KI 3: Understanding faculties and conceptual knowledge by observing, asking, and trying based on curiosity about himself, God's creatures and their activities, and the objects he encounters at home, school, and playground
KI 4: Presenting factual and conceptual knowledge in clear, systematic, logical, and critical language, in aesthetic works, in movements that reflect healthy children's movements, and in actions that reflect the behavior of children with faith and noble character.

Basic competencies :
3.8 : Analyze the water cycle and its impact on events on earth and the survival of living things
4.8 : create a work on the water cycle scheme based on information from various sources

2) Product design making
a) Front Cover



b) Comic Identity


Media Pembelajaran Tematik
Komik Daur Air
Penulis : Arinza Regina Syuri
Dosen Pembimbing I : Dr. Herpratiwi, M. Pd.
Dosen Pembimbing II : Dr. Sugeng Widodo, M. Pd.
Validator Ahli Materi
Validator 1 : Dr. Pargito, M. Pd.
Validator 2 : Syafnida Ifrianti, M. Pd.
Validator Ahli Media
Validator 1 : Dr. Eti Hadiati, M. Pd.
Validator 2 : Haris Budiman, M. Pd.

c) Contents

3) Expert validation
Before the product is produced to be tested or validated on users, the product is first tested for feasibility by experts. The validation carried out includes material validation by material experts and media validation by media experts.

➢ Material Expert Validation
Material validation is carried out to evaluate the product based on the feasibility aspect of the material content, including the quality of the content and purpose of the material and the quality of presentation, as well as the quality of contextual assessment. Material validation is carried out by material experts who are involved in their fields.

Table 7. Material Expert Validation Results

Aspect	Validator		Total Score	Criteria Appropriateness
	1	2		
Content eligibility	3,69	3,56	3,63	Valid
Serving eligibility	3,4	3,6	3,5	Valid
Contextual assessment	3,56	3,33	3,44	Valid
Average score	3,52			Valid

From the table of material expert validation results with an average score of 3.52 with valid eligibility criteria, it can be concluded that the development of the Water Cycle Comics learning media can be used in the thematic learning process for fifth grade elementary school.

➢ Media Expert Validation
Media validation is carried out to evaluate the product based on the feasibility aspect of the material content, including the quality of the graphic feasibility aspect and the language feasibility aspect.

Table 8. Media Expert Validation Results

Aspect	Validator		Total Score	Criteria Appropriateness
	1	2		
Graphic Eligibility	3,61	3,46	7,07	Valid
Language Eligibility	3,67	3,58	7,25	Valid
Average score	3,62			Valid

From the validation table of the media expert, the feasibility aspect of graphics got an average score of 3.53 with valid eligibility criteria, it can be concluded that the development of the Water Cycle Comics learning media product can be used in thematic learning for fifth grade elementary school.

4) Improved Product Design Validation Results
Suggestions for product design improvement based on the validation of media experts and material experts:
a. Add an introduction or brief description of the material
b. Complete with exercises in the comic appendix

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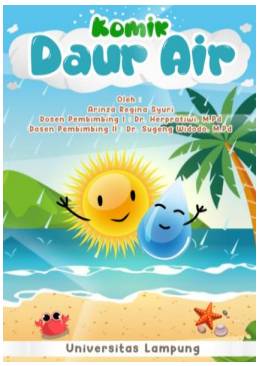
c. Try to write material and images that are not too dense
d. Use a different color with the appearance of the letters

Based on the suggestions of media expert validators and material expert validators, the product revision is carried out as follows:



Before Revision

After Revision

5) Product Trial

Researchers conduct product trials on a limited basis on users. This limited product trial was conducted with 2 classroom teachers, one-on-one trial, and small class trial. Limited product trials were conducted to find out user responses after using the Daur Air Comics product regarding aspects of material clarity, ease of understanding the language used, and product attractiveness. User response assessment indicators consist of material aspects, language aspects, and attractiveness aspects.

Table 9. User Response Test Results

No	Aspect	Total Score	Criteria Attractiveness
1	Theory	78%	Attractive
2	Language	84%	Very Attractive
3	Attractiveness	89%	Very Attractive
Average score		84%	Very Attractive

The results of the user response test show a figure of 84% with very interesting information. The product developed is considered very attractive due to the comic design and illustration material that attracts students' interest, the language used is easily understood by students, and the presentation is simple. In addition, the product is considered easy to use, both by teachers and students. By using the developed product, students are able to understand the material more concretely, no longer as abstract and difficult to understand material.

IV. CONCLUSION

1. The process of developing learning media based on comic strip print media to increase student motivation and learning outcomes was developed using the Borg and Gall Research and Development method in six stages, namely the potential and problem stage, product design planning, product design creation, validation. experts, design improvements, and the final product after validation.
2. This means that the product developed is feasible to use. The results of media validation obtained an average score of 3.59 with valid information. This means that the product developed is feasible to use. The results of the user response test show a figure of 84% with very interesting information. The product developed is considered very attractive in terms of the content of the material, the language used, and the overall attractiveness of the design.units.

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