

# Development of Digital-Based Comic Media to Improve Literature, Reading Understanding and Learning Outcomes in Class III Students Primary School

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## ABSTRACT

This research is a research and development of learning media which is an intermediary in distributing the material presented so that it is easy for students to understand the material presented by the teacher. The results of observations and interviews conducted before conducting research showed that learning activities were still using the 2013 curriculum book, learning media was still minimally used resulting in students getting bored in Indonesian subjects which had an impact on literacy skills. This research uses research and development (R&D) methods. This research was conducted at SD IT Bina Amal Semarang, Central Java, Indonesia with a total of 28 students. The validation results obtained media validators with a value of 62 very valid categories, material and language validators with a value of 45 very valid categories. The results of the pretest and posttest values were tested using the N-gain value. The result of the N-gain value is 0.9250 with a very high category, meaning that digital-based comic media is very effectively used to improve literacy skills for third grade elementary school students.

**Keywords:** Media comics, Comics, Indonesian

## INTRODUCTION

Entering the 21st century Indonesian language learning is expected for students to have the ability to understand information, knowledge can be obtained through various

activities, one of which is reading literacy. Literacy is closely related to reading literacy skills which lead to the ability to understand information analytically, critically, and reflectively. Therefore, reading comprehension literacy skills need to be developed in students. Reading literacy skills have various roles in life, so it is important for students to master them well in order to create reading literacy habits. (Anzar & Mardhatillah., 2017) there are difficulties that are often faced by elementary school students in facing Indonesian language learning, difficulties in understanding texts and also difficulties in understanding language skills in Indonesian language material. The ability of students to understand learning concepts is different from one another. This can make them have different opinions in solving a problem. The more mastered a concept in learning, it is hoped that solving a problem will become easier, and learning outcomes will be better. Digital-based comic media is one of the learning media that is easily accessible and very interesting because it offers diverse and colorful images so that learning media has great use in supporting the effectiveness of learning.

As said (Sudjana & Rivai, 2011) that the role of comics in teaching is its ability to increase students' interest in learning.

Providing a pleasant learning experience can improve student learning outcomes. In addition, the use of comics in learning makes learning activities more interesting and not boring so that students' interest and motivation in learning become higher. This comic media has the potential to be liked by students, according to (Indaryati & Jailani, 2015) Comic pictures can animate a row of written text that accompanies it, so that students can imagine what is really the essence of the learning.

## **LITERATURE REVIEW**

### **1. Learning Media**

According to (Pakpahan et al., 2020) Media is a learning tool that is expected to help students learn better. Thus the media is categorized as good if the media can help students to learn something better. In the teaching and learning process involves a component that works together to achieve learning objectives, these components are the teacher and the media.

### **2. Types of Learning Media**

According to (Luh & Ekayani, 2021) in the selection of media must pay attention to the complex and unique learning process, then the accuracy of the selection of media and learning methods will greatly affect student learning outcomes. In addition, the perceptions of students also greatly affect learning outcomes. Therefore, in the selection of media, in addition to paying attention to the complexity and uniqueness of the learning process, understanding the meaning of perception and the factors that influence the explanation of perceptions should be pursued optimally so that the learning process can take place effectively.

### **3. Comic Media**

Comics are the right alternative media for learning, because the emotional involvement of the reader will greatly affect the memory and memory of the subject matter obtained (Mediawati, 2011). Important technical features of comics according to (Lewkowich, 2019) affect how texts are read. However, there are no hard and fast rules about how comics should be

read or written, which at least in his opinion, is one of the comics' most interesting artistic features. Integration of comics with teaching activities according to (Akcanca, 2020) will open a new window for the imagination of students and thereby contribute to their creative thinking process.

### **4. Learning Media Functions**

According to (Wicaksono et al., 2020) The function of comics media that is in accordance with the context of everyday life can make the material in accordance with the development and experience of students so that students are motivated to learn and understand the material that will have an impact on increasing students' cognitive learning outcomes.

### **5. Strengths and Weaknesses of Comic Media**

Comic design carried out by (Juanda et al., 2015) has advantages and disadvantages. The advantage is that it is interesting and quickly understood by students. Stimulating characters in students by showing a character interacting with different unique characters and making decisions in various scenario conditions. The downside is that the impact isn't instantaneous, and results may vary depending on the individual. Students have excessive imagination about the world in comics and may make the real world unattractive.

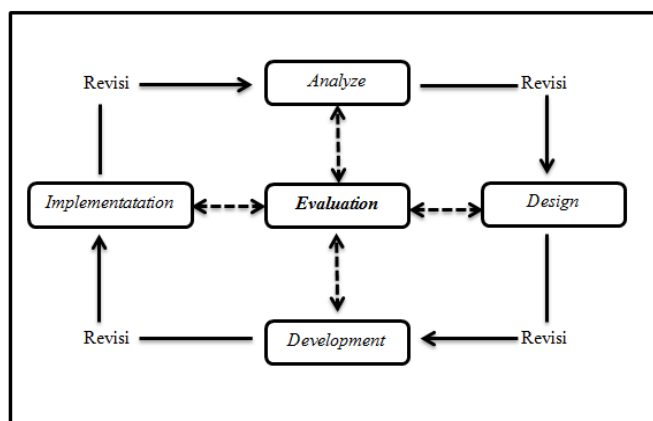
### **6. Digital Based**

According to (Amanullah, 2020) By utilizing digital learning, students become more familiar with various kinds of existing technological developments as well as developing information developments. According to (Nur Ika Fatmawati, 2019) over time, the flow of information becomes easier to spread. Likewise, technology that delivers information is growing faster.

## **MATERIALS & METHODS**

The research design uses the Analyze Design Development, Implementation, Evaluation (ADDIE) development model based on the consideration that this model is developed systematically, coherently in an

effort to solve problems. The design steps in the research to be carried out are as follows:



ADDIE Research and Development Steps

This development research with students and teachers. The test instrument uses several validity instruments for media experts, linguists and material experts, including an analytical questionnaire using a score interval category that adjusts the number of instrument items so that it uses a scale rating according to (Shahrir, 2016)

Table 1 Category Rating Scale by (Shahrir, 2016)

Score	Score Interval	Category
A	$(M + 1.50S) > X$	Very good
B	$(M + 0.50S) < X < (M + 1.50S)$	Well
C	$(M - 0.50S) < X < (M + 0.50S)$	Not good
D	$(M - 1.50S) < X < (M - 0.50S)$	Not good

Information:

M = Average ideal score, (ideal maximum score + ideal minimum score).

S = ideal standard deviation, 1/6 (ideal maximum score – ideal minimum score).

X = Total score

Based on the formula in table 1, it can be obtained guidelines for converting quantitative values 1 to 4 into qualitative categories to conclude how the quality of the media developed. The subject of this research was conducted on third grade students and teachers at SD IT Bina Amal Semarang, Central Java, Indonesia. Research and development collection techniques were obtained from qualitative and quantitative data. Qualitative data obtained from observations, interviews and documentation. Quantitative data were obtained from a questionnaire on the

attractiveness of students and teachers, and pretest-posttest questions.

## RESEARCH RESULT AND DISCUSSION

Digitization is a hallmark of the 21st century, the current era is known as the information society era. The spread of information is getting faster and greatly affects social life, including the world of education. Digitization of education is happening very rapidly, the need for innovation in learning is absolutely necessary in the face of the era of digital progress. According to (Amarulloh et al., 2019) By utilizing digital learning, students become more familiar with various kinds of existing technological developments as well as developing information developments.

### Digital-Based Komica Media Validation Results

Before conducting the trial, digital-based comics learning media needs validation from experts. Media validation is done once to media, language and material experts. Validation is carried out by Unnes postgraduate lecturers who have backgrounds that are in accordance with their fields.

#### 1. Media Expert Validation

Digital-based comics media were validated by media experts aimed at obtaining the suitability of the comic display media, materials and visual

communication in detail described in table 2.

**Table 2 Recapitulation of Media Experts**

Total score	Maximum Score	Average	Category
62	64	3.8	Very Valid

Based on table 2, the media validator gave a score of 62 from the maximum score with an average of 3.8. The assessment guidelines used by researchers are:(Shahrir, 2016)based on the interval according to the items of the media validation instrument contained in the interval score  $X > 49$ . This can be interpreted that digital-based comic media is very valid to use.

## 2. Material and Language Expert Validation

The validation of material and language experts on digital-based comics media aims to find out the material according to the Core Competencies and Basic Competencies, as well as suggestions regarding good and correct grammar based on the enhanced EYD in detail described in table 3.

**Table 3 Recapitulation of Material and Language Experts**

Total score	Maximum Score	Average	Category
45	48	3.75	Very Valid

Based on the material experts gave a score of 45 out of a maximum score of 48 with an average of 3.75. Based on the

**Table 4 Recapitulation of Student Attractiveness Questionnaires**

Trials	Number of students	Score	Maximum Score	Category
Small Scale	14	712	814	Very interesting
Large Scale	28	1538	1680	Very interesting

Based on table 4, a small-scale trial carried out as many as 14 students got a score of 712 from a maximum score of 814 with an interval of  $X > 632$  very interesting category.

A large-scale trial was conducted at SD IT Bina Amal Semarang, Central Java, Indonesia with a total of 28 students, namely products that have been refined based on suggestions from a small-scale attractiveness test. The attractiveness score of the large-scale trial is 1538 from a maximum score of 1680 with an interval of  $X > 1262$  which means it is in the very attractive category. While the small-scale and large-scale teacher trials in detail can be seen in table 5 below.

**Table 5 Recapitulation of Educator Attractiveness Questionnaires**

Trials	Number of Educators	Score	Maximum Score	Category
Small Scale	1	37	40	Very interesting
Large Scale	1	38	40	Very interesting

Based on table 5 small-scale trials, the teacher got a score of 37 out of a maximum score of 40 with an interval of  $X > 32$  which

results, the validity of digital-based comics media was assessed by media validator experts with an interval of  $X > 39$  in the very valid category.

## Attractiveness Trial Results

The attractiveness test is a measurement of the level of attractiveness of digital-based comic media products to measure the attractiveness of the developed product. Komica media products are tested on a large scale before they are ready for use at SD IT Bina Amal Semarang, Central Java, Indonesia. The purpose of small-scale testing is to minimize the shortage of developed products. A small-scale trial was carried out with 14 fourth grade students and fourth grade teachers who would be given comic media. Komica media products are given as learning, which will then be read and studied by students within a certain time, then students are asked to fill out a questionnaire response to the interest in digital-based comic media. Large-scale trials are an absolutely perfect product, The results of the large-scale trial carried out at SD IT Bina Amal Semarang, Central Java, Indonesia with a total of 28 students and third grade teachers will be explained in detail in table 4 below.

means it is in the very interesting category. The results of large-scale trials get a score of 38 out of a maximum score of 40 with an

interval of  $X > 32$  which means it is in the very interesting category.

### Komica Media Effectiveness

The effectiveness of this study can be seen from the distribution of pre-test and post-test questions in a large-scale trial in class III SD IT Bina Amal Semarang, Central Java, Indonesia. The questions before being used were tested for quality in class IV, which consisted of 14 students. Testing questions consist of validity, reliability, level of difficulty and distinguishing power with the number of questions used as many as 15 questions in the form of multiple choice and 15 questions in the form of descriptions.

#### 1. Validity

The success of a learning using digital-based comic media that has been implemented needs to use an evaluation test. Calculation of the validity test, the researcher uses the 2013 version of Microsoft Excel. The validity test uses the product moment formula, which is to see the correlation comparison ( $r_{xy}$ ) of all items with  $r_{table}$  prices. If  $(r_{xy}) > r_{table}$  then the item is declared valid and vice versa if  $(r_{xy}) < r_{table}$  then the item is declared invalid. Detailed validity results can be seen in table 6 below.

Table 6 Test Item Validity Test Results

Question Form	Criteria	Question Number	Amount
Multiple choice	Valid	1,3,4,7,8,10,11,12,14,15	10 grains
	Invalid	2,5,6,9,13	5 items
Description	Valid	1,2,3,4,5,7,8,9,11,13,	10 grains
	Invalid	6,10,12,14,15	5 items

Based on table 6 above, there are multiple-choice questions, totaling 10 valid questions and 5 invalid questions, questions in the form of descriptions totaling 10 valid questions and 5 invalid questions. A valid question of 20 items can be used to test completeness and improve reading literacy skills, while an invalid question of 10 items will be discarded or not used.

#### 2. Reliability

Reliability was analyzed after the validity test, the researcher analyzed the test to determine the reliability index. To find out whether the test is reliable or not, the researcher uses criteria with limits equal to or greater than 0.70 meaning the test is declared to have high reliability and vice versa. . After the questions were tested using the 2013 version of Microsoft Excel, the reliability results on multiple choice questions were obtained at 0.9145 and the reliability results in the description questions were 0.871, which means that the reliability of the questions was very high.

#### 3. Difficulty Level

Through calculations using the 2013 version of Microsoft Excel, it can be determined which questions have a level of difficulty with the criteria of very easy, easy, medium, difficult and very difficult. Based on the results of calculations with the 2013 version of Microsoft Excel, the results can be seen in table 7 below.

Table 7 Test of Difficulty Level Analysis

Question Form	Criteria	Question Number	Amount
Multiple choice	Very easy	0	0 items
	Easy	2,5,6,8	4 grains
	Currently	1,3,4,7,9,10,11,12,13,14,15	11 grains
	Hard	0	0 items
Description	Very easy	0	0 items
	Easy	0	0 items
	Currently	1,2,6,9,10,11,12,15	8 grains
	Hard	3,4,5,7,8,13,14	7 items

The results of the analysis in table 7 using data on the level of difficulty, the researchers used questions of moderate and difficult level of difficulty criteria, while the very easy and easy criteria would be discarded or not used.

#### 4. Distinguishing Power

The analysis of discriminatory power of questions is used to determine whether the questions can distinguish high-ability students from low-ability students. Table 8 below is the result of the analysis of the differentiating power of the questions.

**Table 8 Test of Differential Power Analysis**

Question Form	Criteria	Question Number	Amount
Multiple choice	Ugly as hell	0	0 items
	Bad	0	0 items
	Currently	7,8	2 items
	Tall	5,11,13	3 items
	Lofty	1,2,3,4,6,9,10,12,14,15	10 grains
Description	Ugly as hell	0	0 items
	Bad	12,15	2 items
	Currently	1,2,3,4,5,6,7,8,9,10,11,13,14	13 items
	Tall	0	0 items
	Lofty	0	0 items

The results of data analysis table 8 above using different power data, the researcher uses power criteria questions with medium, high, and very high criteria, while the very bad and bad criteria will be discarded or not used.

Based on the test of questions consisting of validity, reliability, level of difficulty and distinguishing power of 14 students, there are 10 multiple choice questions and 10 description questions that can be used by researchers to be used as pretest and posttest to improve learning outcomes and literacy skills and reading comprehension of students.

The pre-test learning outcomes before using digital-based comic media were 28 students who achieved completeness, only 16 students (57%). Meanwhile, 12 students (43%).

The results of literacy reading comprehension pretest before using digital-based comic media there were 28 students who achieved completeness only 17 students (60%). Meanwhile, 11 students (40%). After implementing learning using digital-based comic media, a posttest assessment was carried out which obtained data from learning outcomes and reading comprehension literacy skills.

The results of the posttest study showed that of the 28 students who achieved completeness, 25 students (89%), while those who had not completed as many as 3 students were 11%), with an average score of 85%. The pretest and posttest normality tests were tested through Kolmogorov-Smirnov using the 2013 version of the Microsoft Excel application, the learning outcomes showed the pretest was 0.261 greater than 0.05 eating normally

distributed, and posttest 0.228 greater than 0.05 which means the data is normally distributed.

The results of posttest reading comprehension literacy showed that from 28 students who achieved completeness 23 students (82%), while those who had not completed as many as 5 students (18%), with an average score of 85%. The pretest and posttest normality tests were tested through Kolmogorov-Smirnov using the 2013 version of the Microsoft Excel application. The study results showed that the pre-test was 0.241 greater than 0.05, with normal distribution, and posttest 0.172 greater than 0.05, which means the data is normally distributed.

Calculation of N-Gain, learning using digital-based comic media shows that the average pre-test result is 63 and the post-test result is 94. The calculation so that the increase in N-Gain is 0.9250 with a fairly effective category. The result of literacy reading comprehension improvement of N-Gain is 61,347 with quite effective category. This study shows that learning using digital-based comic media is effective in improving learning outcomes and reading comprehension literacy. It can be said that digital-based comics media are effective enough to be used to improve learning outcomes and literacy skills for third grade elementary school students.

## CONCLUSION

Based on the results of the research that has been carried out, the conclusions that can be put forward in this study are as follows: 1) the development of digital-based comic media to improve learning outcomes and literacy skills in reading comprehension on

the weather theme for grade III Elementary School. 2) The digital-based Komica media is considered valid by the validator, the learning media validator with a value of 62 categories is very valid, the material and language validator with a value of 45 categories is very valid. 3) Digital-based comic media is considered very attractive by third grade students and teachers at SD IT Bina Amal Semarang. The results of measuring the attractiveness of digital-based comic media by students are 1538 from a maximum score of 1680 with an interval of  $X > 1262$  which means it is in the very interesting category. The results of the attractiveness of the wide-scale trial for the third grade teacher got a score of 38 out of a maximum score of 40 with an interval of  $X > 32$ , which means that it is in the very attractive category. 4) Digital-based comics media are effective for improving learning outcomes and literacy skills for third grade students at SD IT Bina Amal Semarang. The results of the N-gain value are 61,347 with a medium category meaning that digital-based comic media is quite effective in being used to improve the reading literacy skills of class III students.

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