

## The development of comic-based teaching material using contextual approach to students of amalyatul huda elementary school medan

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**Abstract:** This study aims to determine how the development of comic-based teaching material using a proper and effective contextual approach. The teaching material developed is comic-based teaching material using a contextual approach. The subjects in this study were fourth-grade students of SD Amalyatul Huda Medan. This type of research is R & D research using the 4-D model. To see the feasibility of teaching material is obtained from 5 validation experts. Meanwhile, to see the effectiveness of teaching materials obtained from trials of teaching material. The trial was carried out twice. The first trial was conducted on nine students consisting of three students in low ability, three students in medium ability, and three students in high ability. While the second trial was conducted on fourth-grade students consisting of 32 students. Based on the conclusions from five experts, they stated that comic-based teaching material using contextual approach were included in the good category and deserved to be used. Meanwhile, based on student assessment result of the teaching material in the first and second trials, the category was excellent. It can be concluded that the development of comic-based teaching material using contextual approach is feasible and effective for students.

**Keywords:** Development Research, Based Teaching Material, Contextual Approach

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## INTRODUCTION

The industrial revolution 4.0 era and the development of technological advances, it requires teachers to be able to advance the education world. With a good education, the students generated have good skills and good character so that they can compete in the world of work which has increasingly fierce competition. With technological advances, teachers are required to develop teaching materials that can be applied in and outside the classroom by utilizing technology.

Learning resources is one of the educational problem in Indonesia. The teacher has still difficulty in choosing and using learning resources optimally (Safitri, 2021). Teachers cause it only use text book from the government, do not integrated environment situation in teaching learning process, does not refer to material obtained from library, and do not refer to a specific web address. Learning resources consist of several kinds, one of them being teaching materials. Teaching materials are great learning resources and have an essential role in supporting learning (Ahmad, 2010). Teachers are required to be able to arrange innovative and creative teaching materials according to the curriculum, the development of student needs, and the development of information technology (Zuriah, 2016).

Teaching materials are all forms of materials consisting of a set systematically arranged and used to assist teachers in the learning process and enable students to learn (Depdiknas, 2002). Teaching materials are needed in all subjects in school, and one of them is mathematics. Teaching materials can help students to understand concepts and solve math problems. Teaching materials can replace some of the teacher's roles, so that learning is students-centered (Suciana, 2018).

Based on interview results from a teacher of SD Amalyatul Huda Medan, most teachers use conventional methods and techniques in teaching. They stated that having difficulty developing teaching materials, especially using technology. As a result, students feel bored when learning. Also, it causes a lack of student involvement in learning activities and the lack of student reading literacy. The teaching materials cannot be said to be based on a contextual approach, so students have difficulty in understanding the contents of these teaching materials. In addition, the books used are primarily full of text which makes students lazy to read.

Existing teaching materials still do not motivate students to learn and use them because they still do not attractively display. In comparison, teaching materials with various images and colors help students to recall material well and be more attracted (Sari, 2016).

According to Santyasa in (Somayasa, 2013) the benefits of using teaching materials are: 1) students' motivation increases, 2) teacher and students easily identify students who do not achieve the learning outcomes, 3) students can get results based on their abilities, 4) subject matter is divided equally, and 5) it leads to appropriate teaching learning process practices appropriate education. The use of unvaried teaching materials causes the learning process only in one direction where students only listen teacher's explanation. It makes students tend to be less active, so learning becomes uninteresting. The use of appropriate teaching materials will be able to motivate students to create interesting and fun learning (Sorraya, 2014).

One of the teaching materials that can be developed using images is comics. Comics are a popular art form especially among children and thus provide the potential for science education and communication (Tatalovic, 2009). Comics can potentially attract students' attention, affecting student learning outcomes. The images in the comics can revive the enthusiasm for students' learning. Complex explanations from a textbook can be represented well by combining text and pictures in a comic, so students can easily understand. Comics act as a practical option for developing teaching materials, increasing

students' creativity, and improving students' numeracy and reading literacy skills. Most students are more interested in reading comics because they present many pictures, called photo comics, so that students do not feel bored when reading them (Tyas, 2013). Comics as learning media are used to convey learning messages, so the communication process between students and learning resources will run optimally if the learning messages are delivered clearly and interestingly (Waluyanto, 2005). Meanwhile, the research conducted (Clydesdale, 2006) concluded that comics as part of the exposure pedagogy can be helpful and effective for students to use to master concepts in a non-stressful way. Trimo in (Nendasariruna, 2016) said that using comics as a learning medium gives advantages: students easily catch abstract things, and it develops students' reading interest. Furthermore, In learning mathematics, one suitable alternative is math comics. according to Maulana in (Putri, 2015) Mathematical comics presented descriptively and narratively can make students more motivated to learn mathematics. It also optimizes how the brain works to remember mathematics lessons. Besides teaching material, teachers must also be concerned with the teaching approach implemented, such as a contextual approach. Contextual approach-based teaching materials make students easily build their concepts through actual events that occur in students' lives. Linking the content of lessons with the environment around students will make learning more meaningful because students know the lessons learned in class will be useful in daily life (Murtiati, 2012). Contextual learning emphasizes more between subject content and real-life conditions so that students can connect and implement learning outcomes in everyday life (Amri, Sofian dan Ahmadi, 2010). Using linking the subject matter with the context of life and the needs of students will increase their learning motivation and make the teaching and learning process more efficient and effective (Hasnawati, 2006). So, contextual-based mathematical comics are mathematical material presented using still images, accompanied by storylines and dialogues between characters, which are integrated with everyday life.

Based on the above background, the researcher wants to know how to develop comic-based teaching materials by using a proper and effective contextual approach. Moreover, using these teaching materials can improve students' numeracy and reading literacy skills. It is expected that with this research, teachers can design their teaching materials in the learning process by using these teaching materials and students can increase their learning motivation.

## **METHODS**

### **Research Design**

This type of research is R & D (Research and Development) research, namely the development model of Thiagarajan, Semmel and Semmel, namely the 4-D model. This model consists of four stages: the definition stage, the design stage, the development stage, and the dissemination stage. This research was conducted at SD Amalyatul Huda Medan.

### **Participants**

The subjects of this study were fourth-grade students for the 2021/2022 academic year consisting of 32 students consisting of 18 male students and 14 female students. While the object of this research is comic-based teaching materials using a contextual approach.

### **Data Collection and Instrument Techniques**

The data collecting method was done by using validation sheets and student response questionnaires. The validation sheet in this study was used to see the level of feasibility of comic-based teaching materials using a contextual approach. It was obtained from five validation experts: material or content experts are a Mathematics lecturer and a

Mathematics teacher. At the same time, linguistics consists of two validators, a lecturer of Bahasa Indonesia and a teacher of Bahasa Indonesia. Then, for media design, one validator is a computer lecturer.. Meanwhile, to see the effectiveness of teaching materials obtained from trials of these teaching materials. The trial was carried out twice, namely the first trial (limited) and the second trial (field), in the form of data from student responses to teaching materials. The first (limited) trial was conducted on nine students consisting of threestudents in low ability, three students in medium ability, and three students in high ability. While the second trial (field) was conducted on fourth-grade students consisting of 32 students. After using comic-based teaching materials with a contextual approach, students give a response in questionnaire sheet to assess the teaching materials used.

**Data Analysis Technique**

The data analysis technique used is the feasibility analysis of comic-based teaching materials using the contextual approach seen from the aspect of validity. the data was obtained from five validation experts consisting of two material or content experts, two linguists, and a design expert. Each of these indicators has criteria in scoring from 1 to 5. The results obtained are then written in the appropriate column in the table. Furthermore, the values obtained are referred to at intervals for determining the level of validation of comic-based teaching materials using a contextual approach as follows:

**TABLE 1.** *Criteria for level of validation results*

<b>Criteria</b>	<b>Description</b>
1	Very Poor
2	Poor
3	Average
4	Good
5	Very Good

**RESULTS**

The teaching materials developed in this research are mathematic comic-based using contextual approach. Before the comic-based teaching materials using contextual approach are tested on students, the teaching materials must be assessed by experts. Therefore, based on the research procedure, to measure the feasibility of developing comic-based teaching materials using contextual approach, it can be seen from the validation sheet that has been assessed by experts,material experts, linguistics, and design experts. The results of the assessment of several experts can be seen as follows:

**Material or Content Expert**

Material or content validated by experts in the field of Mathematics. The material experts consist of one Mathematics lecturer and one Mathematics teacher. The test data of material experts related to teaching materials was obtained from a questionnaire filled out by learning material experts.

The development product is called Mathematic comic-based teaching materials using a contextual approach in Mathematics and was given to the validator. Then, the validators filled the validation sheet. Based on the evaluation result, there was a need for revisions in several points, and others had to be adapted to the material taught by the teacher this semester.After the material was adjusted to the students by the existing curriculum, material experts carried out a trial from the Mathematics lecturer.. The average score was 4.53. While the results of trial data from Mathematics teachers, overall,

with an average score of 4.58. The results of the material expert's assessment of the development product through filling out the validation sheet can be seen below;

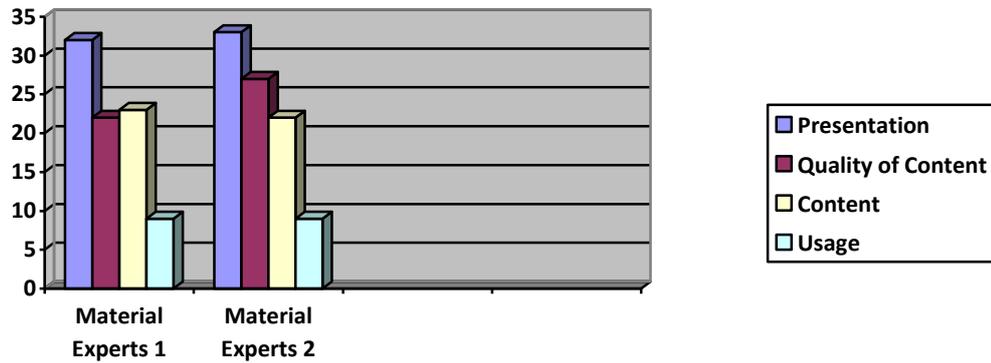


FIGURE 1. Trial data from material experts 1 and 2

TABLE 2. Trial data from linguists

No.	Aspects Measured	Linguists 1	Linguists 2
1.	Using good and correct language rules	4	4
2.	Using correct Grammar	5	5
3.	Writing simple sentence structure	4	5
4.	Stating instruction and directions clearly	4	5
5.	Using terms that are following the concepts in the subject	4	5
6.	using simple language and easy for students to understand	5	4
7.	using communicative language	4	5
8.	Choosing the accurate language in describing the material The accuracy of language selection in describing the material	5	4
9.	Using sentence that represent the content of the message or information to be conveyed	5	5
10.	Using simple and explicit sentences	4	5
11.	Writing and Spelling words accurately	5	5
12.	using terms consistently	5	5
13.	using symbols or icons consistently	4	4
	<b>Total</b>	<b>58</b>	<b>61</b>
	<b>Average Score</b>	<b>4,46</b>	<b>4,69</b>

Source: Data from linguistic questionnaire

The data above is the result of obtaining validation sheets that have been carried out by material experts one and two. The aspects measured are presentation, content quality, content and use. For the "presentation" aspect, the total scores from material experts one and two were 32 and 33 with the mean scores being 4.57 and 4.71. For the "quality of content" aspect, the total scores from material experts one and two were 22 and 23 with the mean scores being 4.4 and 4.6. For the "content" aspect, the total scores from material experts one and two were 23 and 22, with the mean scores being 4.6 and 4.4. For the "usage" aspect, the total score from material experts one and two is 9, with the average score being 4.5. So the total scores of all aspects measured by material experts one and are 86 and 87, with the mean scores being 4.53 and 4.58.

### Linguist

The linguistic validation is from a Bahasa Indonesia lecturer and a Bahasa Indonesia teacher. Material expert trial data related to teaching materials were obtained from

questionnaires filled out by the validators. From the linguistic validation results, Bahasa Indonesia lecturer obtained an average score of 4.46. While the results of trial data from Bahasa Indonesia teacher, overall with a mean score of 4.69. The following will describe the results of the linguist's assessment of the development product through filling out the validation sheet.

### Design Expert

The design expert is a computer lecturer. he assessment carried out by design experts stated that the design of comics teaching materials must be made as attractive as possible. When students use these teaching materials, it could increase student interest. Then after being given input by design experts, it looks attractive when students read it. Then the display of teaching materials can be seen in the image below:



FIGURE 2. Display of some pages of the comic after being revised from design experts

Design experts suggest providing interesting and contextual images following students' real lives. In addition to attractive pictures, design experts also suggest adding text, so it will be more enjoyable for studnets to see and read. The following will describe the results of the design expert's assessment of the development product through filling out the validation sheet.

Based on the descriptions from five validation experts , it can be concluded that the Mathematics comic-based teaching materials using contextual approach developed are in the valid category. Valid is an assessment of providing accurate information about the teaching materials developed (Trianto, 2009). In line with this, data obtained from a valid product can be said that the product developed has provided an overview of the development objectives correctly and in reality (Arikunto, 2009).

**TABLE 3.** *Trial data from design experts*

No.	Aspect Measured	Score
1.	Relevant to learning objectives	5
2.	Relevant to curriculum	4
3.	attractive	4
4.	Good Image and text quality	5
5.	Perfect for practice and student participation	4
6.	Flexible used both individual or in groups	5
7.	Relevant to scope of learning content	5
8.	appropriate to student conditions	4
9.	Adequate student engagement	5
10.	Practical use of teaching materials	4
11.	Valuable Cover quality	5
12.	Interesting cover design	5
13.	Good accuracy of layout typing	5
14.	Consistent in using spaces, titles, subtitles and material typing	5
15.	Clarity of typing	4
16.	Consistency in using symbols or icons	5
17.	Good accuracy in presenting the material	4
18.	Good clarity in ordering presentation of material	5
<b>Total</b>		<b>83</b>
<b>Average</b>		<b>4,61</b>

Source: Data from design expert questionnaire

### Student Trial

Trials of comic-based teaching materials using contextual approach were conducted on the students twice, namely the first trial (limited) and the second trial (field trial). The first trial (limited) was conducted on a small group of nine students and the second trial (field trial) was conducted on the fourth-grade students of SD Amalyatul Huda Medan which consisted of 32 students. Student trials were conducted on Mathematics and Indonesian subjects.

#### First Trial

This first trial was conducted on nine students consisting of three people who have low abilities, three people who have moderate abilities, and three people who have high abilities. To know the level of ability such as low, medium and high abilities, it can be seen from the value of the students' report cards in the third grade obtained from the class teacher. Based on the results of the first trial, the data obtained from the analysis of the results of the first trial is as follows:

**TABLE 4.** *Recap of analysis of first trial results*

No.	Data Description	Average Percentage of Student Respondents
1.	Very Good	77,15%
2.	Good	18,62%
3.	Average	4,23%
4.	Deficient	0%
5.	Poor	0%

Based on the recap of the analysis of the results of the first trial on nine students, the average percentage of student respondents choosing very good qualifications is 77.15%, the average percentage of student respondents choosing good qualifications is 18.62% and the average percentage of student respondents choosing average qualifications is 4.23%, so there is no need for revision of comic-based teaching materials

using contextual approach. It can be concluded that comic-based teaching materials using contextual approach can be used for students during learning and are highly desirable because they get new and fun teaching materials.

### Second Trial (Field Trial)

This second trial was conducted on fourth-grade students of SD Amalyatul Huda Medan, which consisted of 32 students. From the results of the second trial (field trial), the data obtained from the analysis of the results of the second trial are as follows:

**TABLE 5.** Recap of the analysis of the results of the second trial (field trial)

No.	Data Description	Average Percentage of Student Respondents
1.	Very Good	89,69%
2.	Good	6,96%
3.	Average	3,35%
4.	Deficient	0%
5.	Poor	0%

Based on the recap of the analysis of the results of the second trial (field trial) on 32 students, the average percentage of student respondents choosing very good qualifications is 89.69%, the average percentage of student respondents choosing good qualifications is 6.96% and the average percentage of student respondents choosing average qualification is 3.35%. It can be concluded that comic-based teaching materials using contextual approach are very suitable to be used and very effective in learning.

## DISCUSSION

### The Validity of Comic-Based Teaching Materials by Using Contextual Approach

The advantage of this comic-based teaching material is to present images related to students' daily lives (contextual) so that students will be more interested in reading the material presented by the teacher. This is in line with research conducted by (Waluyanto, 2005) which concluded that if viewed from the function aspect of learning comic engineering, it would appear that something is serious and difficult can be made in a clear and fun way. Through learning that matches the characteristics and students need, they will be more interested and motivated to learn. Similarly, research on contextual learning that was conducted by (Purwanto, 2015) based on the results of the validation of contextual-based mathematics teaching materials on the set material developed as a whole obtained an average of all aspects of 82.14%, which can be declared very feasibly. It shows that the teaching materials developed are suitable to be used as teaching materials to help students and teachers in the teaching and learning process. In addition, this statement is supported by the results of other studies, that using various methods and emphasizing the process of teaching and learning activities based on learning experiences are very important in making comic-based teaching materials (Putra, P.D.A., & Iqbal, 2004).

In this case the learning is said to be valid if it is obtained from the validation results of the five experts consisting of material experts, linguists and design experts. Based on material experts' point of view, the aspects measured are based on presentation, quality content, content and use. Presentation in math material must be based on the truth of math concepts and there are no errors in writing symbols (Widyastuti. D., 2017). Meanwhile, from linguists' point of view, the aspects measured are based on language rules, grammar, the use of language in the sentences and the accuracy of language

selection. The language used in comic-based teaching materials by using contextual approach has used good and correct Bahasa Indonesia structure. In addition, the language used is colloquial language in students' real lives so that it is adapted to the cognitive abilities of students at the elementary school. The language, sentence structure and messages conveyed in this comic are easily understood by students and in accordance with students' language development which can lead to the student understanding.

Furthermore, based on design experts' point of view, the aspects measured are based on image quality, image interest, and image suitability with learning materials. The use of image media such as interesting comic, provide entertainment, humor, and storylines that have similarities with the students world. Thus, making exciting reading and giving assignments can be completed by students well (Mirnawati, 2020). Based on the material validation result, language and design, it can be concluded that comic-based teaching materials using a contextual approach have fulfilled the valid criteria and are suitable for learning media. This media can be used for trials on students.

### **The Effectiveness of Comic-Based Teaching Materials By Using Contextual Approach**

Based on the trial result conducted on students using comic-based teaching materials using a contextual approach, the trials results of student assessment of the teaching materials in the first and second trials were in the very good category. From these results, we can see that students are more interested in learning by using comic-based teaching materials using contextual approach. Because there are pictures that are presented fit to the students' real life and by using these teaching materials it can increase students' interest in learning mathematics and students' reading literacy also increases. Presenting the material delivered through pictures and verbal symbols in comics can provide clear information and make it easier for students to understand the material. It is due to research that has been conducted by (Yulian, 2018). This study indicates that 86% of students stated that it was easier to use comic media because it was accompanied by words and pictures that supported each other. Mind mapping in comics also helps students to remember and develop math concepts. Based on the final research results above, it is concluded that comic-based teaching materials using the developed contextual approach have been effectively used in learning for students.

### **CONCLUSION**

The conclusion obtained from this research is the development of comic-based teaching materials using contextual approach validated by several experts, namely material experts, linguists and design experts from lecturers and teachers. The validation results show that the teaching materials were developed to fulfill the valid criteria. Meanwhile, based on the student assessment of teaching materials that have been developed in the first trial (limited trial), it gets the average percentage of student respondents choosing very good qualifications of 77.15%, while in the second trial (field trial), the average percentage of student respondents choosing very good qualifications was 89.69%. Student assessment of comic-based teaching materials using contextual approach is very good category. So it can be concluded that the development of comic-based teaching materials using contextual approach is very feasible and effective for students in learning.

The limitation of this research is that research was only conducted in one school, so the results cannot describe the whole comic-based teaching material by using contextual approach that is feasible and effective contextual approach for students to use in learning. Therefore, it is hoped that other researchers can conduct the same research by involving more research subjects and having a wider scope.

Based on the results of this study, the researcher has several suggestions, for example teachers can design their teaching materials that can support the learning process; the results of this study can be used as considerations for teachers to be able to

develop comics teaching materials using other approaches and the results of developing comics teaching materials This can be used as a starting point for development result of comics teaching material on other subjects.

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