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MEDIA DEVELOPMENT OF COMIC WORKSHOP FOR MATHEMATICS LEARNING STUDENTS FOR CLASS V SD

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Abstract

The research development was carried out in order to overcome the problems of students who felt difficulties in Mathematics in grade V SD. The development of this research is so that students are enthusiastic about learning mathematics and change the mindset of elementary school students that learning mathematics is not difficult and even tends to be fun. This research was conducted by Research and Development. The initial process of making pictorial story material and comic illustrations was then validated by a team of media experts, linguists and material experts. Continue to be tested in small groups in order to see the level of readability and student response to a learning medium for students and teachers, so that it can be concluded that the comic strip media for learning mathematics can be used as a medium for learning mathematics in grade V SD. The results of the research on Mathematics Learning Comic LKS for grade V SD have been developed according to the stages according to Sugiyono which are limited to seven stages. At the validation stage, it shows that the results of 17 material expert validation obtained a percentage score of 80.6%, including the feasible criteria. The results of the linguist validation obtained a percentage score of 83.3%, including the feasible criteria. The results of the media expert validation obtained a percentage score of 82%, including the feasible criteria. In the readability test, students towards the media got a score of 85.6% and in the response test students got a score of 91%, so it can be concluded that the media is very feasible.

Keywords: Development, learning media, comic of student's worksheet

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1. INTRODUCTION

Mathematics learning is learning that teaches material and prioritizes understanding rather than memorization. Learning mathematics is used so that mathematics teaching can improve, mathematics is easier to learn and more interesting. So it is concluded that learning mathematics is the teacher's effort to build character, and develop the quality of life of students

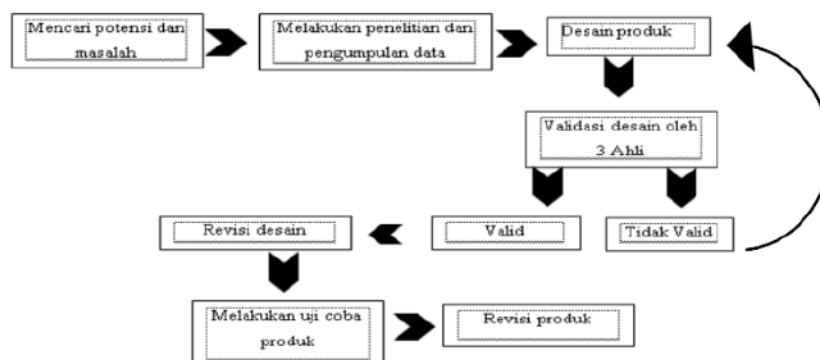
and to support students in learning, in order to promote good mathematics learning, mathematics is easier to learn and more interesting.

Therefore, the researcher will develop the media, namely the mathematics worksheets media containing comics. In addition to containing comic strips, the researcher also presents cube and block material, there are comics that are connected to the work of student activities, later the students will work on the student activity sheets. Besides there are student activities in comic lks media, there is a student competency test and students work on the questions in the competency test. The researcher also added that this evaluation is intended so that students know how much they are able to understand the material in the comic lks media

The use of media can help student learning procedures, the learning atmosphere will be more enjoyable and the teacher can encourage students to be enthusiastic about learning. Comic lks media can be used to convey messages and can stimulate students' thoughts, can foster enthusiasm for learning and willingness in students so that they can motivate the learning process in students.

2. RESEARCH METHODS

This method uses a type of Research and Development (R&D) study, which is a process that includes several stages of developing a new product or completing a product and perfecting it to be accountable. This observation aims to improve existing products. The product in this research is the comic strip, in the implementation of media development in accordance with the existing education system. This research leads to the Borg and Gall development model. Sugiyono argues that the development model contains 10 stages, but this researcher reaches the seventh stage. Approaches to development using qualitative and quantitative. The qualitative approach was carried out because when developing there was verbal data and the results of the open questionnaire assessment were obtained and then analyzed descriptively. The quantitative approach is carried out because in the study there is numerical data from a closed questionnaire which is analyzed using descriptive statistics. So the stages of this research are as follows:



Pictures of research steps

Potential and known problems by distributing questionnaires and analyzing student questionnaires that have been carried out in three elementary schools, namely SDN Bendosewu 02, SDN Wonorejo 01, and SDN Duren 02. At this stage, the class V teacher interviews, gives student questionnaires and observations. Aim to find out any problems in the Mathematics learning process in schools related to the material being taught.

3. RESULTS AND DISCUSSION

The results of the mathematics comic lks media for grade V SD, namely: a). The Lks produced is feasible to support mathematics learning for grade V SD. ; b). The results of the student and teacher readability test of the fifth grade elementary school math comic strips. The next stage is the learning media validation process. This validation includes material validation, media validation and language validation.



COMIC DESIGN
PICTURE



MATERIAL DESIGN
PICTURE



STUDENT'S ACTIVITY
PICTURE

The first step is for the researcher to validate the contents of the comic story together with the media validator. The media validators consisted of Mrs. Ida Putri Rarasati, M.Pd as validator 1 who was a lecturer at the FKIP Balitar Islamic University, Mrs. Sri Lestari, S.Kom., MT as validator 2 who was a lecturer at the FKIP Balitar Islamic University and Mr. Dwi Prastyono, S .Pd. who is a teacher of UPT SD Negeri Ngaringan 02 as a validator 3.

| Nomor Soal | Validator 1 | Validator 2 | Validator 3 | Total Skor |
|------------|-------------|-------------|-------------|------------|
| 1 | 4 | 5 | 5 | 14 |
| 2 | 3 | 4 | 4 | 11 |
| 3 | 4 | 4 | 4 | 12 |
| 4 | 4 | 4 | 4 | 12 |
| 5 | 3 | 4 | 5 | 12 |

| | | | | |
|---------------|---|---|---|-----|
| 6 | 4 | 4 | 4 | 12 |
| 7 | 5 | 5 | 4 | 14 |
| 8 | 4 | 4 | 4 | 12 |
| 9 | 4 | 4 | 5 | 13 |
| 10 | 3 | 4 | 4 | 11 |
| Total skor | | | | 123 |
| Skor Kriteria | | | | 150 |
| Presentase | | | | 82% |

Media Expert Validation Table

From the results of 3 media expert validators, the percentage of the value obtained was 82%. From the criteria of 90% -100%, it is categorized as very feasible. 75% -89% eligible category. 65%-74% category is quite feasible. 55% -64% less feasible category. 0% -54% inadequate category. According to the eligibility criteria, the value obtained in the media expert validator is in the range of 75% -89%, so it is categorized as valid worthy of use.

Furthermore, the linguist validation process, the validator consisted of Mr. Sabitul Kirom, M.Pd as validator 1 who was a lecturer at the FTI Balitar Islamic University, Mr. Soegeng Rupianto, SS, M.Pd as validator 2 who was a lecturer at FKIP STIT Al-Muslihun and Mrs. Yustian Susanti, S.Pd. who is a teacher M.A Hasanudin Sumberjo as the validator 3.

| Nomor Soal | Validator 1 | Validator 2 | Validator 3 | Total Skor |
|---------------|-------------|-------------|-------------|------------|
| 1 | 4 | 5 | 5 | 14 |
| 2 | 4 | 4 | 4 | 12 |
| 3 | 4 | 4 | 5 | 13 |
| 4 | 4 | 4 | 4 | 12 |
| 5 | 4 | 4 | 5 | 13 |
| 6 | 4 | 4 | 5 | 13 |
| 7 | 4 | 4 | 4 | 12 |
| 8 | 4 | 4 | 4 | 12 |
| 9 | 4 | 4 | 4 | 12 |
| 10 | 4 | 4 | 4 | 12 |
| Total skor | | | | 125 |
| Skor Kriteria | | | | 150 |
| Presentase | | | | 83,3% |

Linguist Validation Table

From the results of 3 linguist validators, the percentage of the value obtained was 83.3%. From the criteria of 90% -100%, it is categorized as very feasible. 75% -89% eligible category.

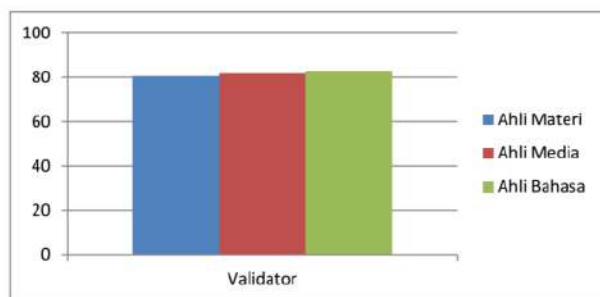
65% -74% category is quite feasible. 55% -64% less feasible category. 0-54% in the inadequate category. According to the eligibility criteria, the value obtained on the linguist validator is in the range of 75%-89%, so it is included in the valid category and is suitable for use.

Furthermore, the material expert validation process, the validators consisted of Ms. Desy Dwi Riana, M.Pd as validator 1 who was a lecturer at the FKIP Balitar Islamic University, Mrs. Ida Putriani, M.Pd as validator 2 who was a lecturer at the FKIP Balitar Islamic University and Mr. Kasman, S .Pd.SD who is the teacher of the UPT SD Negeri Plumbangan 02 as the validator 3.

| Nomor Soal | Validator 1 | Validator 2 | Validator 3 | Total Skor |
|---------------|-------------|-------------|-------------|------------|
| 1 | 5 | 5 | 5 | 15 |
| 2 | 4 | 4 | 4 | 12 |
| 3 | 4 | 4 | 4 | 12 |
| 4 | 3 | 4 | 4 | 11 |
| 5 | 3 | 4 | 4 | 11 |
| 6 | 3 | 4 | 4 | 11 |
| 7 | 4 | 4 | 4 | 12 |
| 8 | 4 | 4 | 4 | 12 |
| 9 | 4 | 4 | 4 | 12 |
| 10 | 4 | 4 | 5 | 13 |
| Total skor | | | | 121 |
| Skor Kriteria | | | | 150 |
| Presentase | | | | 80,6% |

Material Expert Validation Table

From the results of 3 material expert validators, the percentage of the value obtained was 80.6%. From the criteria of 90% -100%, it is categorized as very feasible. 75% -89% eligible category. 65-74% of the categories are quite feasible. 55% -64% less feasible category. 0% -54% inadequate category. According to the eligibility criteria, the value obtained by the material expert validator is in the range of 75% -89%, so it is included in the valid category and is suitable for use. Of the three teams of media experts, linguists and material experts can be classified in the criteria of 90% -100% including the very feasible category. 75% -89% eligible category. 65% -74% of the category is quite feasible, 55% -64% is in the category of less feasible. 0% -54% inadequate category.



The results obtained from the validation test by 3 expert fields, it is known that the comic strip that was developed is categorized as good with an average of 81.9% so it is suitable to be used for further trials. Media that has been declared valid then conducts trials. Research trials were carried out, namely small groups. This stage is carried out to determine student responses to the media. After the trial was carried out, the students then filled out a readability questionnaire, which discussed the appearance of the media and the students' understanding of the media.

Furthermore, the readability test of comic lks learning media was carried out on students and teachers. The legibility test was carried out in small groups, this was due to time constraints. This readability test was carried out to determine the readability of comic lks media, by means of students and teachers understanding the contents of the comic lks media and then filling in a readability questionnaire containing understanding of the material, media and language used, student interest in the media and then interviewing students and teachers to find out the response of the comic lks media. The results and readability test are as follows.

| No | Nomor Soal | | | | | | | | | | Jumlah |
|------------|------------|---|---|---|---|---|---|---|---|----|--------|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | |
| 1 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 40 |
| 2 | 5 | 5 | 5 | 5 | 4 | 4 | 4 | 4 | 4 | 4 | 44 |
| 3 | 5 | 5 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 42 |
| 4 | 4 | 4 | 4 | 4 | 5 | 5 | 4 | 5 | 4 | 5 | 44 |
| 5 | 5 | 5 | 4 | 4 | 4 | 5 | 4 | 4 | 4 | 4 | 43 |
| 6 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 5 | 5 | 4 | 42 |
| 7 | 5 | 4 | 5 | 4 | 4 | 4 | 4 | 5 | 4 | 4 | 43 |
| 8 | 5 | 5 | 5 | 5 | 4 | 4 | 4 | 4 | 4 | 5 | 45 |
| 9 | 5 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 5 | 4 | 42 |
| 10 | 5 | 5 | 5 | 4 | 4 | 4 | 5 | 5 | 4 | 4 | 45 |
| 11 | 5 | 5 | 5 | 4 | 4 | 4 | 5 | 5 | 4 | 4 | 42 |
| 12 | 4 | 4 | 4 | 4 | 5 | 4 | 5 | 4 | 4 | 4 | 42 |
| Total | | | | | | | | | | | 514 |
| Maksimal | | | | | | | | | | | 600 |
| Persentase | | | | | | | | | | | 85,6% |

Student readability questionnaire table

The readability value of students was obtained at 85.6% of the total maximum of 100% and was considered appropriate and in accordance with the student's readability. So that, in terms of legibility, comic lks media is said to be feasible. Not only by distributing questionnaires, but also conducting interviews with students. The results of the interview can be concluded that the comic strip media has material and illustrated stories that are easy to understand and interesting. The comic strip has an interesting cover, the content in the story and the content of the material make students understand it. Furthermore, the stages in student response use a questionnaire, in order to find out the results of students' responses to the comic lks media. In the student response questionnaire the results obtained are as follows.

| No | Nomor Soal | | | | | | | | | | Jumlah |
|------------|------------|---|---|---|---|---|---|---|---|----|--------|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | |
| 1 | 4 | 5 | 5 | 4 | 4 | 5 | 5 | 5 | 4 | 5 | 46 |
| 2 | 4 | 5 | 4 | 5 | 4 | 5 | 5 | 5 | 4 | 4 | 45 |
| 3 | 5 | 4 | 4 | 5 | 5 | 5 | 5 | 5 | 4 | 5 | 47 |
| 4 | 5 | 5 | 4 | 5 | 5 | 4 | 5 | 5 | 4 | 5 | 47 |
| 5 | 5 | 4 | 4 | 4 | 4 | 5 | 5 | 4 | 4 | 5 | 44 |
| 6 | 4 | 4 | 5 | 5 | 5 | 5 | 4 | 5 | 4 | 5 | 44 |
| 7 | 5 | 5 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 43 |
| 8 | 5 | 5 | 4 | 4 | 5 | 4 | 5 | 5 | 5 | 5 | 47 |
| 9 | 5 | 5 | 5 | 5 | 4 | 4 | 4 | 4 | 4 | 4 | 44 |
| 10 | 5 | 4 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 48 |
| 11 | 5 | 4 | 4 | 4 | 5 | 5 | 5 | 5 | 5 | 5 | 47 |
| 12 | 5 | 4 | 4 | 4 | 4 | 5 | 5 | 5 | 4 | 5 | 44 |
| Total | | | | | | | | | | | 546 |
| Maksimal | | | | | | | | | | | 600 |
| Persentase | | | | | | | | | | | 91% |

Student response questionnaire table

The score obtained is 91%, from a maximum score of 90% -100%. So that the 91% value falls within the range of 90% -100% and is considered very feasible and in accordance with student responses. So that the comic lks media in terms of the results of the student response questionnaire is said to be very feasible. The results of the student response questionnaire concluded that the appearance of the comic lks media was interesting and the contents of the pictorial stories were clearly visible. Students find it easy to understand the material and are more enthusiastic in learning using the comic strip media. And students feel more active in following lessons using this comic strip media.

The feasibility of the mathematics comic lks media as a learning medium for grade V SD. Based on the validation conducted by the researcher, the percentage of values was obtained as follows.

| No | Validasi Ahli | Presentase | Kategori |
|-----------|---------------|------------|----------|
| 1 | Ahli Materi | 80,6% | Layak |
| 2 | Ahli Media | 82% | Layak |
| 3 | Ahli Bahasa | 83,3% | Layak |
| Rata-rata | | 82% | Layak |

Table of mean of field expert validation values

The validity test of comic lks media obtained an average score of 82% which is in the feasible category. The validation test of the material is 80.6% which is in the feasible category. The media validation test obtained a percentage of 82% which is included in the feasible category. And the language validation test obtained a percentage of 83.3% which is in the feasible category. With the criteria of 90% -100%, it is categorized as very feasible, 75% -89% is in the proper category, 65% -74% is in the fairly decent category, 55% -64% is in the poor category, 0% -54% is in the inadequate category. So the validation that is conveyed, the language used in the learning media is created to be truly feasible and can be used as a supporting medium in the teaching and learning process for elementary students and teachers. Of the total validation of all experts in the field, the average score was 82% and it was categorized as feasible and able to be used to support mathematics learning.

4. CONCLUSION

Based on the results of research on learning media for mathematics comic lks, it is concluded that the resulting product is the media for supporting mathematics comic for grade V SD on cube and block material, suitable for use in improving students so that it is easy to understand the material can help facilitate teachers when the learning process of the feasibility of this product is assessed "Feasible" by the material with a percentage of 80.6%, media experts rated "feasible" with a percentage of 82%, linguists rated "feasible" with a percentage of 83.3%.

After the validation was carried out the researcher conducted a product trial in the form of an instructional simulation by filling out a readability questionnaire, the readability test of this product was considered "feasible" with a percentage of 85.6%, then filled out a student response questionnaire and obtained a percentage of 91% and this product was declared "very feasible" for use by students.

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