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DEVELOPMENT OF BLITAR TOURISM PLACE-BASED MATHEMATICS STORY PROBLEM BOOKS

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Abstract

Based on the needs analysis and interviews, it was shown that in learning mathematics, students had difficulty solving word problems related to flat shape material. The purpose of this study was to produce a math word problem book product based on Blitar tourist attractions for learning mathematics with proper flat shape materials. The type of RnD development research that has been developed by Sugiono with six steps, namely (1) looking for potential and problems at SDN Gandekan 2, SDN Kunir 3, and SDN Kunir 2, (2) Conducting research and collection by conducting interviews with class IV teachers, distributing questionnaires student needs and observations of learning mathematics, (3) product design is done by analyzing learning and planning product content, (4) Design validation is carried out by 9 validators consisting of 3 material validators, media validators and language validators, (5) Revision the design was carried out based on expert advice, (6) Conducted readability tests with 5 grade IV students and 5 grade IV teachers. The instrument used in this research is a questionnaire. The feasibility results of the material expert validator are 100%, media experts are 93.5%, and language experts are 91.7%. The results of the teacher's legibility questionnaire obtained a percentage of 95% and the results of the student's readability questionnaire obtained a percentage of 90.4%.

Keywords: *development, story problems, Blitar tourist attractions*

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1. INTRODUCTION

According to Daryanto (2014: 51) learning media can help teachers convey information comprehensively during the learning process. The use of instructional media also influences the effectiveness of learning mathematics and the time allocation for learning. According to Widyastuti (2015: 184) the problems that occur as a result of not using instructional media when learning mathematics are that students have difficulty learning mathematics, get bored quickly, get tired, and do not understand mathematical concepts. Based on a preliminary study conducted by researchers at 3 schools, namely Gandekan 02 SDN, Kunir 03 SDN, and Kunir 02 SDN on November 24, 25 and 27 2019, the same problem was obtained, namely the lack of learning media used when teaching mathematics. Based on the initial analysis questionnaire of students' needs, as many as 67.70% of the 59 students had difficulty understanding flat wake books at school. 32.2% of the 59 students had difficulty determining the area of flat shapes, so it was necessary to develop a book about flat shapes. This is supported by the results of interviews with teachers from the 3 schools that these three schools need a flat-topped book so that students better understand the concept of flat-topped.

The development of a math story book based on Blitar tourist attractions is supported by research that has been done previously, namely research from Anisa Fauzia Khasanah on the Development of Islamic-Based Mathematical Story Problems in Class VII Comparative Material, the research results obtained are student responses to Islamic math comics with a percentage of 80.61 %. So it's in the decent category. Nur Hidayati Laili's 2013 research on the Development of Learning Media Story Problems with Short Stories on Mixed Arithmetic Operation Material for Grade IV Students of SDN Sumberkerep Academic Year 2012/2013 showed that the average percentage of student responses was 95% which was in the very feasible category. Osi Mitari's 2018 research on the Development of Pisa Model Mathematical Problems with the Context of Jakabaring Sport City Tourism in 2018 found that in accordance with the way of thinking of students and the context used was already known by students so it did not give rise to other interpretations so that it was included in the feasible category. Previous research had several drawbacks, namely the story questions developed were limited to one place. Based on this, the researcher developed mathematical word problems based on Blitar tourist attractions with flat shapes taken from 4 tourist attractions in Blitar.

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2. RESEARCH METHOD

2.1. Types of research

The type of research used is Research and Development (RnD). The research procedure used is the Sugiono model with 6 steps. The steps are as follows.

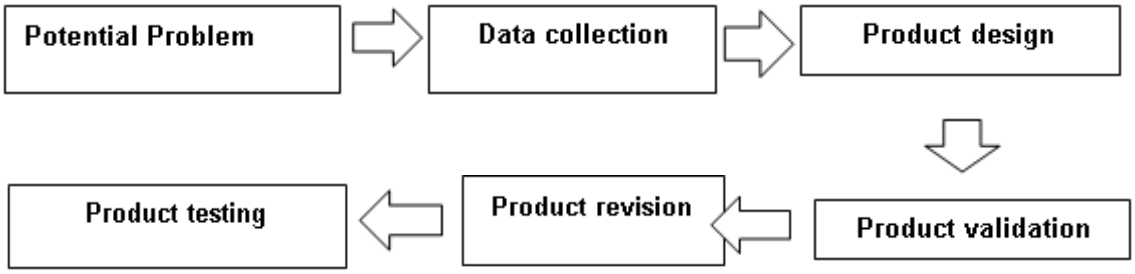

Chart 1: Development procedure of mathematic Essai Book (Sugiyono,2012 :409)

The first step to look for potential and problems was carried out in 3 elementary schools, namely Gandekan 2 SDN, Kunir 3 SDN, and Kunir 2 SDN. The second step was to conduct research and collect data by conducting interviews with fourth grade teachers, distributing readability questionnaires to a total of fourth grade students. 59 students from 3 schools, and made observations on learning mathematics. The third step is product design done by analyzing learning and designing product content. The fourth step of design validation was carried out by 9 validators, 3 validators, respectively, material experts, media experts and linguists. The fifth step is product revision according to the validator's suggestions. The sixth step of the product trial was carried out by testing the readability of 5 grade V students and 5 grade IV teachers

2.2 Research Subject

The subjects in this study were 5 class V students and 5 class IV teachers. Grade 5 students come from SDN Kunir 1 and 5 grade IV teachers come from SDN Kunir 1, SDN Gandekan 1, SDN Pakisrejo 1, SDN Pakisrejo 2, and SDN Karanggayam 3.

2.3 Data Collection

The data collection process used interview techniques with class IV teachers in 3 elementary schools, namely Gandekan 2 SDN, Kunir 3 SDN, and Kunir 2 SDN to find out the difficulties experienced by students and teachers when learning took place, observation techniques to find out the availability of learning media in class, instruments a validation questionnaire used to validate the media of math story books based on Blitar tourist attractions in

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terms of material, media and language. The instrument readability questionnaire for students and teachers is to determine the level of readability of the media for math story books based on Blitar tourist attractions.

2.4 Data Analysis Technique

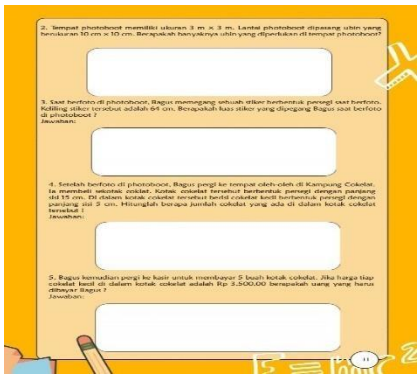
Data analysis techniques were carried out qualitatively and quantitatively. Qualitative data is data obtained from criticism, suggestions and input to expert validation questionnaires, teacher readability questionnaires and student readability questionnaires. Meanwhile, quantitative data is data obtained from expert validator assessments, teacher readability questionnaires and student readability questionnaires.

3. RESULT AND DISCUSSION

The result of this development research is a media product of math story books based on Blitar tourist attractions. The math story book based on Blitar tourist attractions was declared feasible based on the validation of material experts, media experts, linguists and readability tests on teachers and students. The following is the final result of the development of a math story book based on Blitar tourist attractions**.**

Picture 1: Foreword Design

Picture 2: Material Design



Picture 3: Exercise Design

Picture 4: References

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The developed Blitar tourist spot-based math word problem book has been adapted to the validator's suggestions and input. The explanation of the flat shape material is designed in an attractive way and uses language that is easily understood by students, the material is also equipped with examples of problems and their solutions. The results of the development of a math story book based on Blitar tourist attractions are expected to help students understand the flat shape material. Development of a math story problem book based on Blitar tourist attractions through nine expert validators, namely three material experts, three media experts and three linguists. This validation is carried out to evaluate the product being developed. Quantitative data analysis was carried out in the form of the total average score obtained from each validator, while for qualitative data in the form of criticism and suggestions from each validator. The following is the validari's assessment of the three experts in the following table:

No	Validator	Total	Average	Criteria
1	Language	28	91.07%	Very credible
		16		
		17		
2	Materi al	36	100 %	Very credible
		36		
		36		
3	Media	24	93.5%	Very credible
		25		
		24		

Table 3: Result Score from Three Expert Vaalidator

The media validation results obtained a percentage of 93.5% with a very decent category. The Blitar tourist spot-based math story problem book is said to be very feasible in terms of media because the appearance of the media is attractive in terms of design, images, and color composition. In addition to this, the Blitar tourist spot-based math word problem book is simple, practical, and easy to use. The results of the material validation obtained a percentage of 100% with a very feasible category. The material-based math story book based on Blitar tourist attractions is said to be very feasible because the material presented is in accordance with KD, indicators, and learning objectives. The material is presented systematically, the accuracy of the concept, the level of difficulty is in accordance with student development, and are interrelated. Based on the validation results from three expert validators, the Blitar tourist spot-based math word problem book is in the very feasible category with an average percentage of 94.85%. Based on the results of the validation of nine validators, it shows that the Blitar tourist spot-based math story problem book is feasible to be tested in the readability test. The researcher gave a readability

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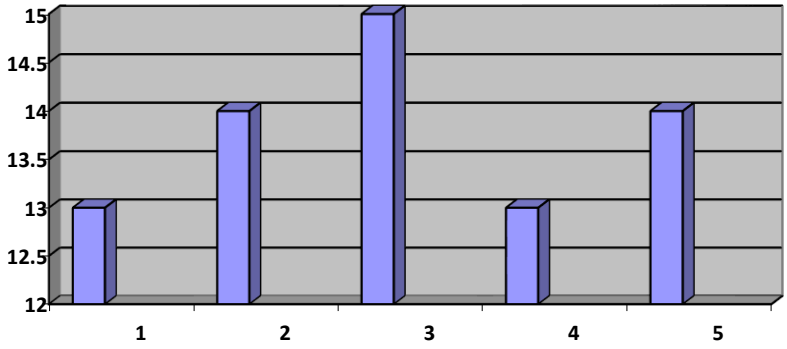
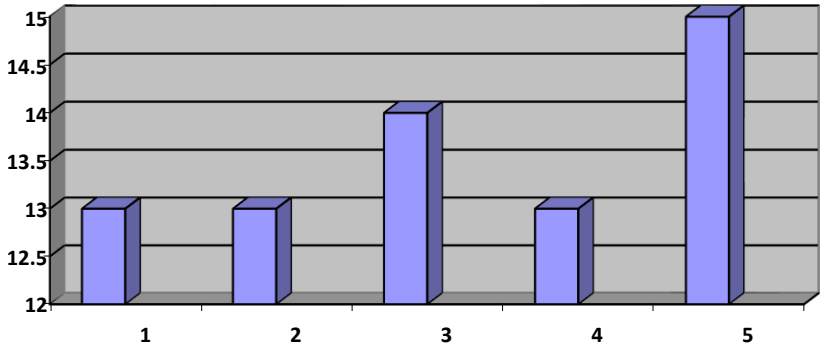
questionnaire to 5 class IV teachers and 5 class V students. The results of the student readability questionnaire can be seen in the following diagram.



Picture5: Questionaire result of students readability

The student readability questionnaire obtained a score of 339 out of a maximum score of 375 so as to obtain a percentage value of 90.40%. This value is in the range of 90% - 100% which is categorized as very feasible. Based on the results of the student readability questionnaire it showed that students gave good responses from the indicators in the student readability questionnaire such as an attractive appearance, students understood the material presented in the book, and the language used was easy for students to understand. The results of the teacher's readability questionnaire can be seen in the following diagram.



Picture 6: Teacher readability result

Based on the data obtained from the results of the teacher's readability test, a percentage of 95% was obtained so that it was in the very feasible category. The teacher gave a good response from the indicators in the teacher's readability questionnaire such as the language used that students could understand, the material presented was in accordance with KD, indicators, and learning objectives, the material was presented systematically, and practice questions could make

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it easier for students to understand flat shape material. Based on the data from the students' and teacher's readability questionnaire, it can be obtained that the Blitar tourist spot-based math story book meets the very feasible criteria so that it can help students and teachers in learning mathematics on flat shapes. The feasibility of learning media for mathematics story books based on Blitar tourist attractions has met the criteria presented by Sadiman (2014: 24) which states that appropriate learning media are learning media that clarify the delivery of material from the teacher to students, increase student interest in learning, in accordance with needs and abilities of students, and in accordance with learning objectives

4. CONCLUSION

This research and development resulted in a math story book media product based on Blitar tourist attractions which aims to produce appropriate media. Based on the results of expert validation, it can be concluded that the appropriateness of the media from material experts is considered very appropriate with a percentage of 100%, media experts are considered appropriate with a percentage of 93.5%, and linguists are considered appropriate with a percentage of 91.07%. The readability test results obtained from the teacher were considered very feasible with a percentage of 95% and from students it was considered very feasible with a percentage of 90.40%.

5. SUGGESTION

It is hoped that the development of a math story book based on Blitar tourist attractions can be used by both teachers and students so that it can increase students' interest in learning mathematics and make it easier for teachers to deliver flat shape material. The development of a math problem book based on Blitar tourist attractions is expected to improve the quality of learning, especially learning mathematics in grade IV of elementary school.

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