

The Validity of Student Book With The Problem Based Learning Model Integrated Creative Thinking Ability To Increase The Creativity Of High School Students

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Abstract—This research is based on observations in several Padang City High Schools, it was found that the students' books that were owned were not based on the learning model requested in the 2013 curriculum. This was also supported by the results of observations and interviews with students who stated that the available student books were lacking complete and tend to be monotonous so that it can be concluded that the level of improvement in their creative abilities is lacking. The development of student books is felt to be very necessary because of the limitations of teachers in explaining material during learning so that it can complement and assist educators in presenting material with models based on the 2013 curriculum model and must contain creative thinking skills, it is necessary to develop student books with Problem Based Learning models with integrate it using creative thinking skills. The purpose of this study was to validate students' books with a Problem Based Learning model that integrates creative thinking skills for high school students. The type of this research is Research and Development and the development model used is the 4-D development model. Validation is done with the research instrument is a validity instrument. The validity instrument used a validity questionnaire, which was first tested for its feasibility using an instrument feasibility questionnaire. Validation includes content feasibility, linguistic feasibility, graphic feasibility and presentation feasibility. The results obtained on the validity sheet of the results stated that the developed student book was declared valid.

Keywords—Problem Based Learning, Student Books, Learning Outcomes.

I. INTRODUCTION

Education is one of the government's ways in realizing the ideals of the unitary state of Indonesia, namely to inspire the life of the nation. One important aspect of education is learning [1]. Learning contains many things such as teaching staff, facilities and infrastructure and many other things. In the learning process, educators are assisted by learning models in achieving learning objectives. The problem that is often experienced is the mismatch between the existing learning model and the development of students who follow the times that have advanced like now so that the learning model requires changes. The government made changes to the curriculum to address this problem, from the KTSP curriculum to the 2013 curriculum. The curriculum is a set of learning system arrangements that guide every education system in implementing learning [1]. The 2013 curriculum uses a scientific

approach that is centered on student participants in discovering and directing the concepts and theories they are learning. The 2013 curriculum suggests several models in learning, one of which is the problem-based learning model (PBL)[2].

Problem Based Learning is a teaching method characterized by real problems as a context for students to learn critical thinking and problem-solving skills, and gain knowledge [3]. In addition, the world of education also demands an increase in the mindset of students, one of which is the ability to think creative[4]. Creative thinking is a person's ability to describe the information or data he receives by finding many answer choices[5]. In other words, not only one solution can be found but also various types of other solutions besides that, the availability of reading materials, namely books. students in learning. The book is a collection of information that is packed based on the concept of its preparation [6]. Based on observations in several Padang City Public High Schools, it was found that the students' books were not based on the learning model requested in the 2013 curriculum, one of which was Problem Based Learning. The use of student books at school also cannot improve students' physical abilities. This is because student books are only oriented towards understanding the material. This is in line with research conducted at SMKN 2 Sungai Penuh [7] with the problem that the teaching materials used have not been able to stimulate students to study independently and prevent students from finding their own concepts. In addition, based on the results of the questionnaire that has been distributed to the observational school, there are several shortcomings in the learning system as shown in table 1.

TABLE I. The Results of the Questionnaire Analysis of the Implementation of Learning for Students

No	Aspek	Hasil	No	Aspek	Hasil
1	The role of the teacher in applying teaching materials in the classroom	70,75%	7	Student attitude responses to the textbooks used	63,6%
2	Student interest in reading books	55%	8	Textbooks can make students motivated	66%
3	The problems given are related to everyday life	62%	9	Availability and completeness of books at school	71,3%
4	The function of study books as a tool and learning resource for students	64,6%	10	Updates on used books	73%
5	Textbooks help students in answering and finding the right answers to the questions or problems they face	66,75%	11	Textbooks help students to be interactive	68%
6	Completeness of illustrations and cases contained in textbooks	65,5%	12	Textbooks help to be used as a guide in providing material by teachers	74%

From the results of table 1, it is found that the use and development of student books in public schools in the city of Padang is still low and some aspect categories seen in the questionnaire are still low, not above 80%. The average results of the questionnaire are only between 50% -70% so that it is still stated that student books do not get development according to student demands. These results are in accordance with previous research proposed [8]. Which stated that the books used did not meet the spiritual, emotional and social components nor did the skills exist in the book. So, all aspects of competence in the 2013 curriculum have not been fully implemented and implemented. According to [9] the development of student books is felt to be very necessary because of the limitations of teachers in explaining the material during learning so that it can complement and assist educators in delivering material with models based on the 2013 curriculum model and must contain creative thinking skills. it is necessary to develop student books with creative problem-based learning models oriented to Problem Based Learning learning models that integrate creative thinking skills. The formulation of the problem in this study is how to book students with a Problem Based Learning model with valid creative thinking skills. The purpose of this research is to produce a student book with a Problem Based Learning model with valid creative thinking skills.

II. METHOD

The type of research carried out is research on the development of a 4-D development model. The 4D development model consists of four main stages, namely: Define, Design, Develop, and Disseminate or be adapted into a 4-D model.

The types of data collected in this study , Validity data is obtained from the results of product validation which is developed in the form of a student book with a Problem Based Learning model that integrates Creative Thinking abilities which are validated by validators who are experts in their fields. The validity of the instrument was carried out by 3 validators who were experts in their fields with the results of the three validators being that the instruments used were valid.

The results of the instrument validation get the results of the instrument being suitable for use. The product validity test is calculated using the value equation and is processed using the Aiken's V formula, namely:

$$V_i = \frac{\sum s}{[n(c-1)]}$$

TABLE II. Validity Criteria

Interpretation	Criteria
$V < 0.667$	Invalid
$0.667 < V$	Valid

(Source: Azwar, 2003:143)

III. RESULT AND DISCUSSION

This research has produced a student book with a Problem Based Learning model oriented to the ability to think creatively. Product development is carried out using a 4-D development model with the following stages: Definition, design and development. Assessment or validation by experts can be determined by the eligibility criteria obtained from the Aiken-V test. The Aiken-V test value is obtained and then converted according to the feasibility conversion table to determine the feasibility level of student books according to respondents.

Product validity was carried out by 3 expert lecturers,. The validation assessment contains 4 aspects. Feasibility of content, feasibility of language, feasibility of presentation and feasibility of graphics

TABLE III. Feasibility Of Content

Indicator	Validator Assesment			Total	Validity Score	Criteria
	1	2	3			
1	4	3	3	10	0,7	Valid
2	4	4	3	11		
3	4	3	3	10		
4	2	2	3	7		
5	4	3	3	10		
6	3	3	3	9		
7	4	3	3	10		
8	3	3	3	9		

9	3	2	3	8		
10	4	3	3	10		
11	4	3	3	10		

From table III, it is found that the developed student book is feasible content this feasibility. This feasibility was tested through 11 questions with an overall V value of 0.7 with a valid category. The next aspect of validity is linguistic feasibility which can be seen in table IV

TABLE IV. Feasibility Of Leaguage

Indicator	Validator Assesment			Total	Validity Score	Criteria
	1	2	3			
1	3	3	3	9	0,8	Valid
2	4	4	3	11		
3	4	4	3	11		
4	3	3	3	9		

From table IV, it is found that the developed student book is linguistically feasible. The linguistic feasibility was tested through 4 questions with an overall V value of 0.8 with a valid category. The next aspect of validity is the feasibility of the presentation which can be seen in table V

TABLE V. Feasibility Of Presentation

Indicator	Validator Assesment			Total	Validity Score	Criteria
	1	2	3			
1	4	3	4	11	0,7	Valid
2	3	4	4	11		
3	3	2	3	8		
4	4	3	4	11		
5	3	3	4	10		
6	4	3	3	10		
7	2	2	3	7		
8	3	3	3	9		
9	3	3	3	9		
10	4	3	3	10		
11	3	3	3	9		
12	3	3	3	9		

13	3	3	3	9		
14	3	2	3	8		
15	3	2	3	8		

From table V it is found that the developed student book is feasible in terms of presentation. The feasibility of the presentation was tested through 15 questions with an overall V value of 0.7 with a valid category. The next aspect of validity is the feasibility of graphics which can be seen in table VI

TABLE VI. Feasibility Of Graphics

Indicator	Validator Assesment			Total	Validity Score	Criteria
	1	2	3			
1	4	4	3	11	0,8	Valid
2	4	3	3	10		
3	4	4	3	11		
4	3	3	3	9		

From table VI, it is found that the developed student book is feasible in terms of graphic feasibility. The feasibility of the graphic was tested through 4 questions with an overall VI value of 0.8 with a valid category. The results of the validation test for all aspects can be seen in table VII

TABLE VII. Product Validity Results

Aspek Validitas	Nilai Aiken-V	Keterangan
Eligibility Of Contents	0,71	Valid
Language	0,78	Valid
Presentation	0,69	Valid
Graphics	0,81	Valid

From table III it can be concluded that all aspects of validity submitted to the validator, all aspects are declared valid. The validity aspect contains 4 things, namely the feasibility of content, language, presentation and graphics. The results of product validity showed that the four aspects were declared valid and overall the product was declared valid. The results obtained in the research carried out are the level of validity of a product, a good product will have a high validation value and is declared feasible to use by conducting validation tests [10]. The results obtained indicate that the developed student book can be said to be feasible or valid to use. Similar results are also the same in research conducted by [11] and [12] who developed a physics module that obtained valid results from the three validation aspects provided. According to the Ministry of National Education, product validity contains 3 aspects of the feasibility of content, presentation and language. The research carried out obtained results that were in the valid category or with the average of the three aspects being greater than 80%. The results that are at a value of 80% are said to be good in accordance with the provisions presented by [10] and the research of Desmiwati et al. [13] regarding the validation of high school physics worksheets with the Problem Based Learning model which scores above 80% in the good category.

The level of validity is determined by testing the value of V. The value of V is obtained by using the Aiken-V formula presented by Aiken, in his book entitled *Psychological Testing and assessment*. Appropriate product validation is validation carried out by 3 validators who are experts in their fields with the results of the three validators being valid [14]. The selection of validators is based on the expertise of their respective fields based on the research of [7] who conducted research for the development of modules with the Problem Based Learning model, the stage of which was to test module validation by 3 validators in their fields. This is also the same as Hidayat's research [15] which carried out development validators by 3 validators who were experts in their fields. So, if a product contains it, it can be said to be valid for use

IV. CONCLUSION

The results of the research and development of students' books using the integrated problem-based learning model of creative thinking skills proved valid. Evidence of validation is evidenced by an assessment by the validator. The validity of the book contains the validity of the content, language, presentation and graphics. The results of the assessment of the validity of the student's book are in the valid category.

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