

Development of Thematic Student Worksheet Based On Problem for Fifth Grade Students of Elementary School

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Abstract: *This study aims to develop teaching materials in the form of Thematic Student Worksheet based on effective problem for improving learning outcomes of fifth grade elementary school students. This type of research used in this study is research and development (R&D) that refers to Borg & Gall's theory. The population in this study were all fifth grade students in Elementary Schools in Rajabasa District. The selected sample is the fifth grade of Al-Kautsar Elementary School with the selection of sample techniques using random sampling techniques. Data collected through questionnaires and test questions. The questionnaire is used to measure the feasibility of the Student Worksheet and test questions to measure the improvement in student learning outcomes. The results showed that Thematic Student Worksheet Based on Problem developed was feasible and effective for learning. This is proved from the results of the acquisition of a questionnaire by experts who stated that the product development was appropriate in accordance with the conditions specified. Hypothesis test results of the effectiveness of the Student Worksheets shows that the Thematic Student Worksheet Based on Problem effectively improve learning outcomes. In addition, the results of the hypothesis test differences in learning outcomes also indicate a higher value between the control class and the experimental class. This shows that Thematic Student Worksheet Based on Problem that are developed are feasible and effective to improve the learning outcomes of fifth grade Elementary School students.*

Keywords: *Learning Outcomes, Thematic Student Worksheet, Problem Based Learning.*

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I. Introduction

The curriculum 2013 in the implementation of learning uses thematic learning that is tailored to the lives and experiences of students and uses a scientific approach. The scientific approach is intended to provide understanding to students in knowing, understanding, various materials using a scientific approach, learning is directed so that students look for information from various sources not informed by the Ministry of Education and Culture (2013). The demands in the implementation of 2013 learning demanded teachers to provide innovation both in terms of the learning model and the teaching materials used. Student Worksheets which were originally known as Student Activity Sheet are sheets containing assignments that must be done by students. Arsyad (2009: 29) revealed that Student Worksheets included media resulting from the development of print technology in the form of books and contained visual material. In general, Student Worksheets contain practical instructions, 10 experiments that can be done at home, material for discussion, crossword puzzles, portfolio assignments, and practice questions, as well as all forms of instructions that are able to get students active in the learning process. The advantages of Student Worksheet as programmed text are:

- a. Learners can learn and progress according to their own pace.
- b. In addition to being able to repeat material in printed media, students will follow the order of thought logically.
- c. The combination of text and images on a printed page is common, this can add to the appeal and can facilitate the understanding of information presented in two formats, verbal and visual.
- d. Specifically in the programmed text, students will actively participate because they have to respond to questions and exercises that are arranged, students can immediately know the right or wrong answer.

Although the contents of print media information must be updated and revised in accordance with developments and new findings in the field of science, the material can be reproduced economically and easily distributed (Arsyad, 2009: 38-39). Through the Student Worksheet the teacher will get the opportunity to lure students to be actively involved with the material discussed. One model that can be utilized to get optimal results from the use of Student Worksheet is by applying a learning model based on problem. Problem based learning is a learning process that requires students to be able to solve problems independently by constructing their opinions in accordance with the experience that they experienced. This is in line with Batdi's opinion in the

journal Safrina & Saminan (2015: 317) stating the problem is a more effective approach compared to conventional approaches. This problem learning model offers students the opportunity to, explore various information, to link learning with their own needs as learners and develop independence in the Savin-Baden inquiry in the journal Mareesh & Padmavathy (2013: 46). Learners' learning skills that use problem will ultimately shape them for self-independent and critical thinkers in the future. Barret & Moore (in Karami, et al. 2013; 38) Problem-based learning activities are learning that helps students to be independent, so they can continue to learn and to solve their problems throughout their lives.

Previous research opinion Ananda and Utiya (2016) with a study entitled "Development of Student Worksheet Oriented Problem Based Learning to Train Creative Thinking Skills In Chemical Equilibrium Matter". Based on the results of data analysis, it can be concluded that the worksheet oriented with Problem Based Learning model to train Creative Thinking Skills in Chemical Equilibrium, developing things are good to be used as learning tools with percentages on content, presentation, graphic criteria and linguistics. Yildirim et al (2011) with their research entitled "The Effect of the Worksheets on Students' Achievement in Chemical Equilibrium". The results of his research showed that the Student Worksheet proved to be more effective than traditional learning methods and made students actively participate in the learning process.

Based on the description of the Student Worksheets and the previous problem-based learning model, the researcher aims (1) to develop a student worksheet based on problem, deserves to improve the learning outcomes of fifth grade Elementary Schoolstudents (2) test the effectiveness of the Thematic Student WorksheetBasedon Problemlearning outcomes of fifth grade Elementary Schoolstudents (3) examine differences in learning outcomes of students who use thematic Problem Based Worksheets with problem based learning outcomes of students who do not use student worksheet based on problem in fifth grade Elementary School.

II. Methods

This research uses the development research method, in which the development research design is based on the adaptation of the development model steps from Borg and Gall. The steps of development research that can be used for research in the field of education as stated by Borg and Gall (1983: 772) are as follows: 1) research and gathering initial information 2) planning 3) developing initial product formats 4) initial trials 5) product revision 6) field trial 7) product revision 8) field trial 9) final product revision 10) dissemination and implementation. The ten steps in the development research from Borg and Gall above, researchers conducted research from step 1 to the 10th step, that are the research step and the collection of preliminary information to the final product revision step after the trial use / field test for large groups. Based on these reasons, researchers have harmonized the development research procedures and adjusted them to the actual research objectives and conditions.

III. Result & Discussion

Based on the results of the development of Student Worksheet based on problem of the fifth grade Elementary Schoolstudents, the initial information gathering up to the final product revision step after the use / field trials for large groups.

1. Initial Analysis

The initial study was a descriptive introduction study to analyze the need to identify thematic learning processes in the fifth grade of Elementary School, which were used as consideration and basis for the development of the Student Worksheet. This step is very necessary because in this development research will be tested Student Worksheet based on problem for students to improve student learning outcomes whose development must be based on empirical data about how the subject will be examined.

2. Planning

The results of the planning stage that researchers have done are (1) Preparation of the Student Worksheet Framework, (2) Systematic Determination, (3) Evaluation Tool Planning.

3. Initial Product Format Development

Follow up on the design that has been carried out in the design phase, the development steps are carried out as follows: Pre Writing and Drafting Thematic Student WorksheetBasedon Problem.

4. Trial of Initial Products

The initial product trial was conducted by validating three aspects. The validation of this teaching material is carried out in three parts, that are the validation of the material expert, the validation of the media expert, and

the validation of the linguist. Material expert validation by Dr. Alben Ambarita, M.Pd., validation of media experts by Mr. Dr. Adelina Hasyim, M.Pd., and validation by linguist Dr. Siti Samhati, M.Pd. The validation results for each section are as follows.

a) Material Expert Validation

Table 1. Results of validation of material experts

Results of validation of material experts	Step 1	Step 2
Total Score	105	124
Maximum Score	136	136
Score	77,21	91,18
Average	3,18	3,75
Category	Good	Very Good

b) Media Expert Validation

Table 2. Results of media expert validation

Results of media expert validation	Step 1	Step 2
Total Score	88	96
Maximum Score	104	104
Score	84,62	92,31
Average	3,38	3,70
Category	Very Good	Very Good

c) Validation of Linguists

Table 3. Results of linguist validation

Results of linguist validation	Step 1	Step 2
Total Score	31	43
Maximum Score	52	52
Score	59,61	82,69
Average	2,38	3,61
Category	Good	Very Good

5. Product Revision

Based on the results of initial product trials and suggestions given by material, media and language experts, so the researchers made product revisions.

6. Small Group Trial

A small group trial was conducted in the sixth grade of Insan Madani Elementary School, amounting to 35 students. The small group assessment was carried out by 10 students consisting of low, medium and high ability students. It is intended to find out the improvement in student learning outcomes before and after the use of Thematic Student WorksheetBasedon Problem. The following are the results of small group trials.

7. Product Revision

Based on the results of small group trials, learning using Thematic Student WorksheetBasedon Problem obtained a gain value of 0.24 in the "low" category, but there was an increase in student learning outcomes. It can be concluded that this Thematic Student WorksheetBasedon Problemis not revised and is worth trying out on large groups.

8. Large group trials

Large group trials are carried out after obtaining data from small group trials that the quality of Thematic Student WorksheetBasedon Problemis feasible to use because it can improve student learning outcomes. The large group trial subjects were fifth grade students of AL-Kautsar Elementary School. Large group trials were carried out through the experimental method of A Class of Al-Kautsar Elementary School as an experimental class of B class of Al-Kautsar as a control class with a class of 30 students each. Large group trials were conducted to determine the effectiveness of Thematic Student WorksheetBasedon Problem and differences in learning outcomes of students who use Thematic Student WorksheetBasedon Problem with students who do not use Thematic Student WorksheetBasedon Problem.

9. Final Product Revision

Revision of the final product is based on the results of hypothesis testing and findings in the field when the product is tested. Based on the results of hypothesis testing that has been done, it is known that the Thematic Student WorksheetBasedon Problemis effective for improving student learning outcomes.

10. Product Implementation

After the product is declared suitable for use by material expert validators, media experts, linguists, small group testing, and product revision stages, the product is implemented. The implementation phase of this product was carried out in a large group trial that is the fifth grade A class students of Al-Kautsar Elementary School, totaling 30 students.

The results of the data obtained based on the pretest and posttest increased by 0.24. Because in the small group trial phase has increased so that the product is not revised and continued in the next stage, that is the large group trial phase involving 30 students of fifth grade A class of Al-Kautsar Elementary School. The product produced is a Thematic Student Worksheet Based on Problem that has been validated by material experts, media experts, and linguists so that it can be used for fifth grade Elementary School students. Then the realization of a Thematic Student Worksheet Based on Problem is appropriate to improve the learning outcomes of fifth grade students in Elementary School.

The effectiveness of a teaching material in learning can be seen from the increase or not. Based on the average increase in n-gain in fifth grade of Al-Kautsar Elementary School that is 0.371 with the category "medium", then, H_0 is rejected and H_a is accepted, so the Thematic Student Worksheet Based on Problem developed effectively to improve learning outcomes of fifth grade Elementary School students.

Based on the results of the calculation of differences in learning outcomes of students obtained t_{count} of 4.242. To test its significance, the t_{count} value was consulted with a t_{table} with $dk = n_1 + n_2 - 2 = 30 + 30 - 2 = 58$, and a significance level of 0.05 obtained a table value = 2.042. So that the average value of the posttest results = $4.242 > t_{\text{table}} = 2.042$, then H_0 is rejected and H_a is accepted, which means there are differences in learning outcomes of students who use Thematic Student Worksheet Based on Problem with students who do not use Thematic Student Worksheet Based on Problem.

IV. Conclusion

Based on data analysis from the results of research and development that has been carried out with the title "The Development of Thematic Student Worksheet Based on Problem for Fifth Grade Students of Elementary School" it can be concluded that: (1) the realization of the development of a Thematic Student Worksheet Based on Problem using Borg theory and Gall. Thematic Student Worksheet Based on Problem are feasible to improve learning outcomes of Elementary School fifth grade students, (2) Thematic Student Worksheet Based on Problem are effective for fifth grade of Elementary School students. This is proved by the increase in the pretest and posttest results of small group students in the low category then the study group test with the effectiveness test using n-gain obtained that the results of students in the medium category, (3) There are differences in learning outcomes of students who use the Participant Thematic Student Worksheet Based on Problem with learning outcomes of students who do not use Thematic Student Worksheet Based on Problem in the fifth grade of Elementary School. This is proved by the difference in learning outcomes of students who use Thematic Student Worksheet Based on Problem with the average value of fifth grade A class learning outcomes.

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