

Developing Worksheets Through Creative Problem Solving (CPS) Model to Improve Students' Creative Thinking for the Class V of SD Tunas Bangsa Makassar

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Abstract

This research aims to develop worksheets through Creative Problem Solving (CPS) model to improve students' creative thinking. The implementation of the research conducted by Research & Development (R & D), with a model of Four-D development. This model consists of 4 stages of development: Define, Design, Develop and Disseminate, with the development of learning mathematics of worksheets for the material fractions through Creative Problem Solving (CPS) model to improve creative thinking the fifth-grade students of SD Tunas Bangsa Makassar. The instrument used in this research was the sheet validity test, sheet test the practicalities, and the post-test (students thinking creatively). Based on the validity test results, worksheets through the model of creative problem solving (CPS) with an average value of 4,01 and valid category. While the test results in the practicalities when the trial was limited worksheets with model creative problem solving (CPS) belongs to the category was very practical, with the percentage of 82,43%. Based on the post-test results, students' creative thinking was the category of creative with a percentage of 81,68%. Finally, it can be concluded that worksheets through a model of creative problem solving (CPS) to improve students' creative thinking that developed were valid, practical, and useful. So it can be applied in class V of mathematics subject.

Keywords: Worksheet; Creative Problem Solving (CPS) model; creative thinking.

INTRODUCTION

Nowadays the development of a more modern era in globalization is marked by the 21st century, where every human is required to develop based on their respective expertise and knowledge. Globalization today demands human resources that are of high quality, an increase in human resources is an absolute requirement to achieve development goals. According to the *Partnership for 21st Century Skills* (2008 : 9) states that one of the competencies that students need to have in the 21st century is the ability of creative thinking, it is necessary to get a job in the foreseeable future, it is in line with Sani (2015: 7) states that the ability of innovation and creativity needed to work in the 21st century.

Based on Government Regulation Number 19 the year 2005 about the National Standard of Education, one of the standards that should be developed is a standard process. Based on the law, every teacher in the educational unit is obliged to arrange the learning completely and systematically so that the learning process continues with interactive, fun, challenging, and motivating students to participate actively, Jannatul Khoiriyah (2014: 137).

The efforts to improve the quality of education at the school level. Various efforts include improving the quality of teachers, curriculum revising, developing a model or method of learning, and performing a variety of research on mistakes that owned the learners (Yusri & Arifin, 2018). Developing the teaching and learning process can be done by designing learning devices able to develop informal and formal learners' abilities.

Elementary school/SD Tunas Bangsa which is located in Makassar, that school is passive in the process of learning because the learning is being used less to facilitate students to learn actively, solve problems and think creatively, especially students of class V. Process of student learning requires teaching tools that can help students to find a concept of their own. However, school circumstances do not follow what is expected because teachers rarely use Worksheets (LKS). In contrast, a lot of advantages that can be obtained in learning if using the Worksheets can help students to become more active, innovative, able to solve the problem and think creatively, with the ability to think creatively this is a competency that must be owned by students in facing the future.

According to Prastowo (Nelly Mauzana, 2016: 10), worksheet is one of the teaching material alternatives appropriate for students. Worksheet can help students add information about the material being studied through the learning activities. The creative problem solving (CPS) model emphasizes teaching and problem-solving skills, followed by strengthening the skills, Budiastuti (2014: 111). Stressed students think critically and develop creativity. When students are faced with a situation of questions, students can analyze a problem and solve it, Udiyah (2017: 541). Teaching and learning run effectively and efficiently characterized by an active student and can think creatively in the learning process.

One of the emphasis or policies the headmaster of SD Tunas Bangsa to improve the quality of learning by organizing the learning creative problem solving (CPS) can improve students' creative thinking in the learning process, especially at the fifth-grade students of SD Tunas Bangsa. Looking closely at the conditions that happen now, then learning *creative problem solving* (CPS) in class V SD of Tunas Bangsa should be studied starting from worksheet development.

METHODS

Method of research used research development or known by *Research & Development (R & D)*, developing devices learning namely worksheets (LKS) through *creative problem solving* (CPS) model on the fifth-grade students of SD Tunas Bangsa of Makassar. The study subjects were worksheets with a model of *creative problem solving* (CPS) on the fifth-grade students of SD Tunas Bangsa of Makassar, with a student population of 30 respondents.

Model and design of this study used a model of the development device, the development model of the device used to develop or validate the product that is used in education and learning. According to Sivasailam Thiagarajan, Dorothy S. Semmel, and Melvyn I. Semmel is known as the *Four-D*. This model consists of 4 stages of development, namely: *Define, Design, Develop, and Disseminate* or adapted into a 4-D. The learning device that was developed in this research was the Student worksheet of mathematics on the material fractions through a model of Creative Problem Solving (CPS).

Data collection techniques used in this research, namely: observation, questionnaire, and test. Observation technique was used to measure the feasibility of learning and students activity. The questionnaire was used to measure the response of the students (the practicalities) to learning. While the tests used to measure the students' creative thinking ability to the subject of fractions are presented with worksheets and *creative problem solving* (CPS) model.

Data about the quality of the product is the result of the development of mathematics worksheets for class V through the model of *creative problem solving* (CPS) techniques of analysis used (1) analysis validation worksheets, (2) analysis of the practicalities, (3) analysis of the effectiveness of ability to think creatively or creative thinking.

RESULTS AND DISCUSSION

Research and development of mathematics worksheets through a model of *creative problem solving* (CPS) Class V of SD Tunas Bangsa Makassar. Model development refers to the development model Thiagarajan 4-D into four stages, namely defining, designing, developing, and disseminating. Several activities must be performed following the step-by-step development of the DFS with the CPS model for each phase/stage.

1) The stage of defining

Based on the results of observation or direct observation to the students and teachers of class V obtained some of the information that the fifth-grade students of SD Tunas Bangsa. They were less happy with the math lesson; they felt bored during the learning process takes place that caused model of applied learning is less effective and creative. This happened because the students are not involved in a real situation. Students' lack of skills in solving problems and less stressed students to be active, think critically and develop creativity in learning mathematics.

Based on a study of the K. 13, the characteristic of students, learning objectives, and learning mathematics, this suggests that they still need worksheets that can support mathematics students thinking ability, one of which is the ability to think creatively. Therefore, worksheets with the model of *creative problem solving* (CPS) compiled by the language used was clear, implementation guidelines brief and easy to understand and contents following real-life, allowing students to express creative ideas in resolving the problem.

2) The Stage of Designing

In the planning stage, there are several components contained in the worksheets with the model of *creative problem solving* (CPS) namely: a cover sheet, instructions learning, format (system numbering, instructions for the completion of the worksheets, layout), and learning activities.

3) The Stage of Developing

The development phases purpose is to produce learning device namely worksheets through CPS model that has been validated and revised based on the input of experts, simulation, and data obtained from the trials is limited. As for the validation test results, worksheets test the practicalities and test the mark's effectiveness with the ability to think creatively.

(1) Validation of worksheets

Assessment validator to the worksheets through the CPS model included the format (the system of numbering, instructions for the completion of the worksheets, layout), content and language in the following table:

Table 4.1 The results of the Validation of the worksheets with CPS Model

No	Aspect of	the Average Value of the Validator I	the Average Value of the Validator II	Mean Score
1	Instructions	4,05	3,97	4,01
2	the Feasibility of the Contents	4,13	4,05	4,09
3	Language	3,95	3,88	3,92
Total		4,04	3,97	4,01

The results of the average assessment of the two validators, namely 4.01, were valid categories. By matching the total average (x) value with the specified categories, the worksheets through the CPS model developed included the valid category with information that can be used with a little revision.

(2) The practicalities

Data of the students' responses used to determine their reaction after the learning activities with the worksheets through a model of CPS on mathematics lesson with the subject of fractions by giving a questionnaire response to the students. Based on the results of the average percentage response of students after learning CPS with the learning device namely worksheets were 82,43% in the category of practical.

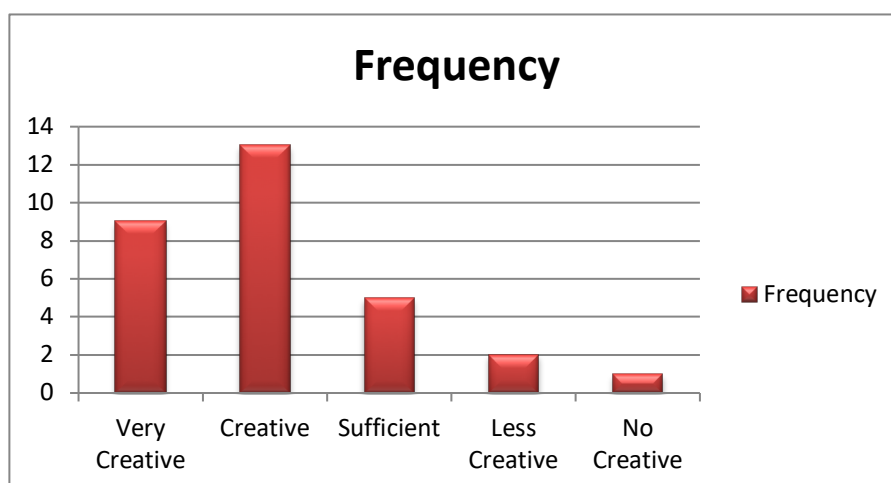
(3) The effectiveness of the

Data about creative thinking abilities of students after the learning activities with the device LKS with the CPS model on the lessons of mathematics the fifth-grade students of SD Tunas Bangsa Makassar, with the subject 30 students, the average score 85,78, the standard deviation of 1.93, the minimum score is 37 and the maximum score of 95. Data test results ability to think creatively were presented in the table below.

Tabel 4.2 The frequency distribution of Creative thinking ability

Interval	Frequency	Percentage (%)	Category
85 -100	9	30,00	Very Creative
70 – 84	13	43,33	Creative
55 – 69	5	16.67	Sufficient
40 – 54	2	6.67	Less Creative
0 – 39	1	3.33	No Creative
Total	30	100	

Test the ability to think creatively after a given treatment with the device worksheets with models CPS, the average score by the percentage of 81,68% are in the creative category. Thus, mathematical worksheets model through CPS improve the creative thinking abilities of fifth-grade students of SD Tunas Bangsa Makassar.



The image of the ability to think creatively

The chart of creative thinking of students with the category of very creative with a frequency of 9 students, in the creative category with a frequency of 13 students, quite creative with a frequency of 5 students, less creative with a frequency of 2 students and one student was no creative. It showed that the creative thinking abilities for 22 students with an average percentage was the creative category (81,68). The assessment of the second validator characterized the results of the development of worksheets of math through the model of creative problem solving (CPS) in students of class V elementary school viable and effective use. It was in the category of valid; the test results of the practicalities was in the category of practical and creative thinking ability of students in the creative category.

4) The stage of disseminating

The last stage in the development of worksheets was the dissemination. This research only propagated in one class, namely class V of SD Tunas Bangsa Makassar, which became the group test products.

CONCLUSION

This research can be concluded that the development of mathematics worksheetson fractions through Creative Problem Solving (CPS) model improve the creative thinking abilities for the fifth-grade students of SD Tunas Bangsa Makassar.

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