

# Creativity in Elementary School Students Solve Multiplication Problem Based on Gender Differences

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**Abstract:-** This research aims to describe the creativity of students in solving the problem of multiplication based on gender differences. The research subject is a sixth grade students of Saint Carolus Elementary School, Surabaya. Data collection is done with interviews and working on the multiplication problem test, which has been validated with the results worth use. The results showed that: (1) Analysis obtained from written and interview tests, masculine type, elementary students have three indicators of creativity. This masculine type has the fluency of working on the story problems and the open multiplication problems, because it can answer correctly more than one correct answer. This masculine type also has the flexibility of working on the story and an open multiplication problem because it can work more than one way right. This masculine type also demonstrates the novelty of working on the story. (2) The analysis gained from written tests and interviews, Feminine type, elementary students have three indicators of creativity. This feminine type has the fluency in working on the story and the open multiplication problem, because it can answer correctly more than one correct answer. This feminine type also has the flexibility of working on the story and an open multiplication problem because it can work more than one way right. This feminine type also demonstrates the novelty of working on the story.

**Keywords:-** Creativity, Elementary School Students, Multiplication Issues, Gender.

## I. INTRODUCTION

Every child has essentially creativity. Treffinger (Hawadi. DKK, 2001) argues that no one has no creativity. Children with creativity by experts are often classified as creative individual traits, for example: great curiosity, happy to ask, high imagination, dare to face the risk, happy about new things, and so forth. There are various factors affecting the development of creativity. The factors of parents, teachers in schools, and the environment are important factors that greatly affect the development of such creativity. High creativity in children will encourage children to enjoy learning and produce more work so that they can create new things. In the educational world, especially in the mastery of certain areas of study, specifically mathematics, men are still considered dominating compared to women. Some experts suggest that between male and female students there is a difference of creativity and mathematical mastery ability. There is a difference in creativity between a boy and a girl according to Hurlock (2011), Boys show a higher level of creativity than in girls especially after childhood ends. According to Dagon (1991), the math skills of boys are better than girls at 11 years of age and older. The way of thinking boys and girls also has a difference, men have an analysis and flexibility than women. Siswono (2008) explains that students who have a background and different mathematical skills, they have different creative thinking skills. This means the differences in abilities and potentials that male students have and women are possible the difference in student creativity in solving mathematical problems. The three main components of creativity that are assessed using TTCT are fluency, flexibility, and novelty.

**II. THEORETICAL FRAMEWORKS**

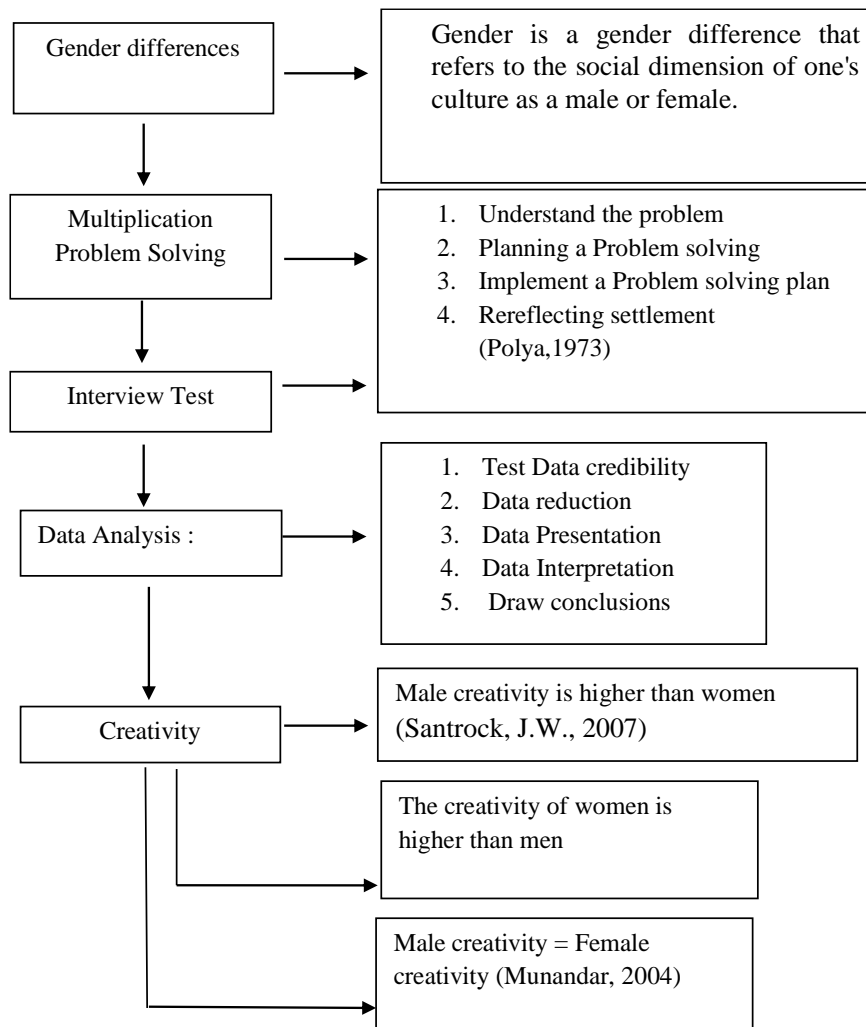


Fig 1

**III. RESEARCH METHODS**

Research conducted by researchers is a descriptive study using a qualitative approach. According to Saryono (2013), qualitative research is a study used to investigate, locate, describe, and describes the quality or privileges of a social influence that cannot be explained, measured or described through a quantitative approach. While according to Sugiyono (2011), qualitative research methods are a method of research based on the philosophy of post positivism, used to examine the nature of the object condition, (as the opponent of the experiment) where the researcher is the key instrument, sampling of data sources is done in purposive and Snowball, a tri-angulation (combined) collection technique, and the results of qualitative research emphasizes the meaning of generalization. Through a qualitative approach, researchers can observe and understand the events And the symptoms that arise in the whole process so that the problems can be described thoroughly (holistically) researchers seek to understand the meaning of events and their interactions with all matters relating to the events or symptoms in reasonable and natural situations. In addition, qualitative

research has been directed to research on the accuracy and adequacy of its data. In this study described the creativity of elementary students in solving the problem of multiplication based on gender differences.

*A. Research subject*

The subject of this study is a sixth grade students of Saint Carolus Elementary School, Surabaya, which is located at Jemur Andayani XXI street, Surabaya.

*B. Research procedure*

Broadly, the research procedure is as follows:

➤ *Preparation Phase*

The activities undertaken at this stage are :

- Develop gender-poll instruments.
- Develop instruments for multiplication problem solving and interview guidelines.
- The results of the preparation of supporting instruments are validated by the validator to obtain valid research instruments.

➤ *Implementation Stage*

The activities undertaken at this stage are:

- Determine the subject of study by gender using polls.
- Determine the subject of research by selecting the same mathematical abilities.
- Provides problem solving multiplication and result will be analyzed with the stages of creativity and held interviews with research subject. Tahap penyelesaian

➤ *Completion Stage*

The activities undertaken at this stage are :

- Managing and analyzing the data of research results.
- Preparation of research reports

**IV. RESEARCH RESULTS**

*A. Research Subject Selection*

The subject selection is taken with a relatively equal level of mathematical ability, That has a difference in the value of  $\leq 1.00$  of the total score of 10 obtained at the value of second semester, fifth grade school year 2018/2019 and have good communication skills orally and in writing so that the disclosure of student creativity goes as expected.

From the mathematical ability gained from the Raport value, two research subjects were obtained. On to the two research subjects were conducted a gender-charging poll to determine the type of the two subjects. The result of such a poll is as follows.

Gender poll results on subject of research					
Subject of student men Elementary School					
Name		: Garrick			
Class		: 6			
Test Number	Masculine Score	Test Number	Feminine Score	Test Number	Normal Score
1	6	2	1	3	5
4	6	5	3	6	5
7	5	8	3	9	7
10	6	11	4	12	4
13	6	14	1	15	7
16	7	17	3	18	4
19	6	20	1	21	6
22	6	23	3	24	4
25	6	26	4	27	7
28	6	29	4	30	5
31	5	32	5	33	7
34	6	35	3	36	7
37	6	38	1	39	7
40	6	41	3	42	7
43	6	44	1	45	7
46	7	47	1	48	3
49	7	50	1	51	7
52	7	53	1	54	4
55	7	56	3	57	4
58	5	59	4	60	7
Amount	<b>122</b>		<b>50</b>		<b>114</b>
Average	<b>6.1</b>		<b>2.5</b>		<b>5.7</b>
Median	<b>6.0</b>		<b>3.0</b>		<b>6.5</b>
Result	<b>MASCULINE</b>				

Table 1

From the data processing poll, obtained that:

- The average masculine score Garrick is higher than the Median masculine score, and the average of Garrick's feminism score is lower than the Median, so it can be concluded that Garrick was the *Masculine* type.
- The average of Ellen's masculine score is lower than the Median of a masculine score, and the average Ellen feminym score is higher than the Median feminism score, It can be concluded that Ellen is a *Feminine* type.

**B. Validity Test Results**

The validity test can provide information to researchers about the extent to which a measuring instrument can measure what is to be measured. The instruments or the measuring instrument developed in this

study are the task-solving and interview sheets. Prior to conducting research, researchers validate troubleshooting task sheets and interview guidelines to Dr. Agung Lukito, M.S. dan Yohanes Nugroho Widiyanto, M.Ed., Ph.D.

Overall, the result of validation can be concluded that the two validators agree that the instrument troubleshooting sheet and interviews used in this study deserve use in research which aims to reveal the students ' creativity in solving multiplication problems.

**V. DISCUSSION**

After test results multiplication problem is corrected and analyzed, obtained data can be used to measure the creativity level of the subject of research.

Problem	Indicator	Description	Explanation
Problem number One Story	Fluency answer to the story more than one way	Fluency	Students can answer correctly, three answers
	Flexibility to use more than one way	Flexibility	Students can answer by using the three correct ways
	Novelty in answering with new ideas and ways	Novelty	From the interview, it was revealed that new ideas and ways
Problem number Two Story	Fluency answer to the story more than one way	Fluency	Students can answer correctly, two answers
	Flexibility to use more than one way	Flexibility	Students can answer by using the two correct ways
	Novelty in answering with new ideas and ways	No	
Number One multiplication problem	Fluency answer to the story more than one way	Fluency	Students can answer correctly, two answers
	Flexibility to use more than one way	Flexibility	Students can answer by using the two correct ways
	Novelty in answering with new ideas and ways	No	
Number Two multiplication problem	Fluency answer to the story more than one way	Fluency	Students can answer correctly, nine answers
	Flexibility to use more than one way	Flexibility	Students can answer by using the nine correct ways
	Novelty in answering with new ideas and ways	No	

Table 2:- Masculine Type Creativity Analysis

Problem	Indicator	Description	Explanation
Problem number One Story	Fluency answer to the story more than one way	Fluency	Students can answer correctly, three answers
	Flexibility to use more than one way	Flexibility	Students can answer by using the three correct ways
	Novelty in answering with new ideas and ways	Novelty	From the interview, it was revealed that new ideas and ways
Problem number Two Story	Fluency answer to the story more than one way	Fluency	Students can answer correctly, two answers
	Flexibility to use more than one way	Flexibility	Students can answer by using the two correct ways
	Novelty in answering with new ideas and ways	No	
Number One multiplication problem	Fluency answer to the story more than one way	Fluency	Students can answer correctly, two answers
	Flexibility to use more than one way	Flexibility	Students can answer by using the eight correct ways
	Novelty in answering with new ideas and ways	No	
Number two multiplication problem	Fluency answer to the story more than one way	Fluency	Students can answer correctly, Thirteen answers
	Flexibility to use more than one way	Flexibility	Students can answer by using the Thirteen correct ways
	Novelty in answering with new ideas and ways	No	

Table 3:- Feminine Type Creativity Analysis

Student creativity Data is derived from the written test results and is strengthened by the results of the interview with the selected student. From the test of multiplication problem obtained raw data in the form of student work. The raw Data is then processed so that the student's creative indicators can be seen.

## VI. CONCLUSION

Based on the study results can be drawn conclusions as follows:

- Creativity of Elementary school men students in solving the problem of multiplication.

From the recharging of gender, the data obtained is masculine type, which man whose nature is above average and his female traits are below average. The analysis gained from written and interview tests, masculine type, elementary students have three indicators of creativity, that is the fluency, flexibility and novelty of working on the story and open multiplication problem.

- Creativity of elementary school girls in solving the problem of multiplication.

From the recharging of gender, the data obtained is a feminine type, which is a man whose nature is above average and his male traits are below average. The analysis gained from written and interview tests, feminine type, elementary students have three indicators of creativity, that is the fluency, flexibility and novelty of working on the story and open multiplication problem.

## SUGGESTION

Based on conclusions as shown above are advised the following things:

- Learning in the classroom needs to be given questions that are open to trigger students to answer in ways and outcomes more than one correctly.
- The problem of repetition needs to be given some questions that are open, with more than one way and answer especially on the description and given a greater score weight.

- Student creativity can be trained by providing open problems. Problem that gives the opportunity there are answers and ways more than one.

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