



An Effort to Improve Students' Learning Achievement And Curiosity Through Realistic Mathematics Education (Rme) Assisted By Comic On Data Presentation For Grade Va In Public Elementary School 1 Pekaja

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Abstract. This study is motivated by the results of low learning achievement and curiosity of students of grade VA in SD Negeri 1 Pekaja class in mathematics. This study aims to improve students' achievement and curiosity attitudes toward mathematics subject through the Realistic Mathematics Education (RME) assisted by comic. This classroom action research (CAR) consisted of 2 cycles, each cycle had 2 meetings. This study was conducted in four stages; planning, action, observation, and reflection. The subjects of this study were grade VA students of SD Negeri 1 Pekaja consisting of 15 male and 5 female. Data collection tools were teacher activity observation sheets, student activity observation sheets and students evaluation sheets and written tests. The findings indicated an increase in each cycle, the first cycle obtained students' achievement 71.88 of the average score or in high category, then increased in cycle II into 82.5 with very high criteria. The increase also occurred in the attitude of students' curiosity, in the first cycle showed an average of 4 points or invisible activity category then increased to 8.5 in the second cycle in very visible activity category. The results of this study show that the use of realistic mathematical approach assisted by comic can improve students' achievement and curiosity attitude on mathematics.

Keywords: elementary school, Attitude of curiosity, students' achievement, RME, comic.

1 Introduction

Mathematics learning should be done in a fun way so that the material taught can be meaningful to students. Suwangsih (2006: 26) states that meaningful learning is a way of teaching subject matter that prioritizes understanding rather than memorization. Furthermore, Hadi (2018: 23) explains that when students find the meaning of lessons at school, they will understand and remember what they have learned. So in learning mathematics so that learning becomes fun, students should be invited to understand the material, not just be invited to memorize formulas so that students feel that what they

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are learning is very important, making mathematics only interesting and meaningful for students who should also pay attention to the characteristics of the students themselves. The characteristics of elementary school students according to Piaget (Suwangsih 2006: 89) are still in the concrete operational stage, in general children at this stage have understood logistical operations with the help of concrete objects. So to make learning mathematics in elementary schools interesting, teachers must make innovations in their learning.

Based on observations and interviews with teachers in class VA Public Elementary School 1 Pekaja, the problems found in learning mathematics are that students are less active in participating in learning, students are not brave enough to ask questions that have not been reached, students look lazy and bored to do the teacher's instructions to find information about the material. From other books, students do not want to socialize with their group friends when solving math problems and there are even students who have difficulty doing calculations. The problems found, especially when students do not want to ask, have an impact on student achievement, especially in mathematics. This can be seen from the results of the daily test evaluation.

Based on the problems found, a Class Action Research (CAR) should be conducted to improve student achievement and increase students' curiosity in learning mathematics about data presentation material in class VA at Public Elementary 1 Pekaja. Suyanto (Muslich, 2012: 9) states that CAR is a form of reflective research by taking certain actions in order to improve and/or improve learning practices in the classroom professionally. Meanwhile, according to Kemmis and McTaggart (Muslich, 2012: 8) state CAR is a study carried out to improve oneself, own work experience, which is carried out systematically, planned and with an introspective attitude. Some of the opinions above provide an understanding that CAR is an action taken mainly in the classroom to improve learning actions and practices that are carried out in a systematic and planned way.

Based on the results of observations and observations as well as interviews with teachers in class VA at Public Elementary Negeri 1 Pekaja, it was agreed that a research would be conducted using Realistic Mathematics Education (PMR) using the media in the form of comics. This research was conducted to increase students' curiosity which is ultimately expected to have an impact on increasing their learning achievement.

The use of RME has been shown to improve learning achievement in the classroom. This has been proven by several researchers (Misel dan Suwangsih E, 2016; Saleh dkk, 2018; and Noviani J, dkk, 2017) The conclusion is that research on the use of RME in the learning process can improve learning achievement. Apart from that, comics media can also be used as innovations in improving the learning process, this has also been proven by previous researchers (Indaryati dan Jailani, 2015; and Subekti E.E dan Istiyani D.F, 2016).

The use of RME is very important, because in learning mathematics in elementary schools it must be in line with the characteristics of elementary school students. This is in accordance with the conclusions of several experts, namely that RME is using a real context or situation in the environment. Students can apply mathematical concepts thoroughly. These concepts must be communicated with their friends so that the learning and concepts they get feel more meaningful.

The use of PMR is intended so that mathematics learning will be more interesting because PMR learning will be associated with life. The use of comics media is intended to provide an overview of the material and make it easier for students to understand the material, besides the use of comics will be made in color with characters that are close to students to attract students' attention and interest in learning. Based on the problems described above, this research is entitled "Efforts to Improve Student Achievement and Curiosity Using Realistic Mathematics Education (RME) Assisted by Comic Media in Data Presentation Materials in Class VA Public Elementary 1 Pekaja".

Based on the background that has been presented previously, the formulation of the problem is as follows: 1) can the application of RME assisted by comic media improve student achievement in data presentation material in class VA of Public Elementary 1 Pekaja?; 2) Can the application of PMR assisted by comics media increase curiosity about data presentation material in class VA of Public Elementary 1 Pekaja?

Based on the background and problem formulation above, the objectives of this research are 1) To know the improvement of student achievement in data presentation material in class VA Public Elementary School 1 Pekaja by using PMR assisted by comic media; 2) Knowing the increase in students' curiosity about data presentation material in class VA of Public Elementary School 1 Pekaja using RME assisted by comic media.

2 Research Methodology

This research was conducted using a type of classroom action research (CAR), also known as Classroom Action Research (CAR), which can be interpreted as research activities carried out in the classroom. Trianto (2012: 13) explains that classroom action research is research conducted in a class to find out the consequences of actions applied to a research subject in that class. Furthermore, Suyanto (Muslich, 2012: 9) explains that CAR is a form of reflective research by taking certain actions in order to improve and enhance professional learning practices in the classroom. The two definitions of CAR above provide an understanding that CAR is an activity carried out in the classroom with a certain action to find out the consequences of the actions that have been applied.

This research was conducted on 20 students in class VA of Public Elementary School 1 Pekaja, having their address in Kalibagor District, Banyumas Regency, Central Java Province. This research was conducted because it is known that students' curiosity is still lacking so that it has an impact on the low learning achievement of students in mathematics.

This research was conducted in the second semester of the 2018/2019 academic year. The time needed for this research is one month to be precise in April-May 2019.

The subjects of this study were VA grade students at Public Elementary School 1 Pekaja, Kalibagor District, Banyumas Regency, Central Java Province in the second semester of the 2018/2019 academic year, with 20 consisting of 15 male and 5 female students.

Data collection is carried out to obtain data or materials needed in the research to be carried out. This study will use two data collection techniques, namely test techniques in the form of evaluation questions and non-tests. The data collection tools used in this study were test questions, observation sheets, and documentation

Every data obtained in the study needs to be tested for validity. All data obtained need to go through the data triangulation process. Sugiyono (2015: 368) explains that triangulation in testing credibility is defined as checking data from various sources in various ways and at various times.

This research is a classroom action research that will be carried out in two cycles, but if it has not met the desired target, it will be continued in the next cycle. The data were obtained from a curiosity questionnaire sheet and an assessment of achievement test results. The data that has been obtained will be analyzed using quantitative analysis.

The type of research used in this research is Classroom Action Research (CAR). This classroom action research will be conducted using the cycle model introduced by Kam-mis and McTaggart. Each cycle consists of planning, implementing, observing, and reflecting.

Measurement of learning achievement is obtained from the value of the evaluation after the learning process and students' curiosity based on the indicators of curiosity for grade 4-6 students, namely 1) Asking or reading sources outside of textbooks about material related to the lesson; 2) Read or discuss natural phenomena that have just occurred; 3) Asking about some social, cultural, economic, political, technological natural events that have just been heard; 4) Asking about something related to the subject matter but beyond what is discussed in class.

The indicators of success in this study are 1) There is an increase in the attitude of curiosity which is marked by an increase in the average score, 2) There is an increase in the learning achievement of all students at least 75% with the Minimum Completeness Criteria is 65.

3 Research Results and Discussion

3.1 Improved Learning Achievement

Research has been carried out on the results of student evaluations that have been carried out at the end of each meeting. The results that have been researched show an increase in each meeting after using the PMR approach and comic media. The increase in student achievement can be seen in table 1 as follows:

Table 1. Recapitulation of Student Achievement Improvement

Cycle	Score Highest	Score	Average	Completeness
I	97,5	0	71,88	77,5%
II	100	0	82,5	92,5%

The increase in student achievement from cycle I to cycle II was generated because students' motivation to know more about learning mathematics also increased. Hamdani

(2011:142) suggests that the strength and weakness of learning motivation also affects learning success. So that when student motivation increases, student learning achievement also increases. This increase in student motivation is due to the fact that this study used the PMR approach and comic media that had never been used before

The PMR approach and the comic media used affect students' interest so that they feel always curious about the material, students who always feel curious will always try to ask questions. As stated by Listiyati (2012: 6) that curiosity is an attitude and action that always seeks to know more deeply and broadly from something that is learned, seen and heard. So if students always try to ask questions about the material, the student's knowledge will increase.

The increase in student achievement results as described above occurs along with an increase in the activities of teachers and students themselves. Suwangsih (2006:16) states that teachers as teaching staff in the classroom should try as much as possible to arouse students' interest in learning in various ways. So when the teacher's activity in carrying out PMR steps using comic media increases, student activity also increases, which means students are interested in the lesson, it also has an impact on the results of student achievement.

This increase in student achievement is also inseparable from the ability of teachers to manage learning and constantly improve the quality of their teaching so that students can receive the material they teach. During the research, the teacher always improves the quality of his teaching by studying the PMR approach and the learning steps using comics media, so that when all the PMR steps are successfully implemented, the student's learning achievement value also increases.

3.2 Increasing Students' Curiosity Attitude

Observations have been made on the activity and curiosity of fifth graders at SD Negeri 1 Pekaja using the PMR approach and comic media. These two observations are carried out simultaneously in each learning process that takes place. The observation process showed an increase in student activity and curiosity at each meeting. The results of this observation are as follows:

Table 2. Activity Results and Student Curiosity

No	Cycle	Average	Criteria	Percentage	Kriteria
1.	I	4	Student activity not visible	40%	very less
2.	II	8,5	Student activity visible	85%	good

The increase that occurs in student activity at each meeting cannot be separated from the teacher's efforts to always guide students to always be active in the learning process. The PMR approach and the comic media used have also had an influence on students' desire to learn the material. In addition, the teacher also encourages students to be active by giving an award in the form of adding value to active students.

The implementation of PMR learning steps using comic media carried out by the teacher also affects the activity and curiosity of students. The more complete the learning steps that the teacher does, the more student activity appears.

In the first cycle of the first meeting, the teacher carried out 8 learning steps which caused only 3 student activities to appear, while at the second meeting the teacher carried out 13 activities so that the student activity points also increased to 5. In the second cycle, the teacher's activity increased again accompanied by improvements in the way of teaching so that the teacher gets 14 points, the student activity points also increase to 8, then at the second meeting in cycle II the teacher's activity again increases, namely to 15 which is also a perfect point, this also has an impact on increasing student activity which becomes 9 points out of 10 indicators.

The inactivity of students described earlier in chapter I was caused because at the previous grade level, namely class IV students were accustomed to the authoritarian attitude of the teacher, the teacher in class IV would give punishment to students who did not pay attention or tried to respond to the teacher's explanation, this is This causes students to be afraid when they want to ask questions. The teacher in class V has actually also accustomed students to break from their old habits by starting to get students to answer simple questions from the teacher, such as "have you eaten?" or "who is the absent student today?". after the teacher made this habituation, now the student's activity is gradually recovering, the students are willing to answer the teacher's questions or ask the teacher even though the teacher must first approach the student.

During the research process, there was one student who always did not go, according to the fifth grade teacher, the student's attendance could be calculated, namely in one month the student only left for one week. So during the research process, these students never got points or evaluation scores and became one of the factors for the low points earned by students.

Based on the results of research using the PMR approach using comic media that has been carried out, the results show that the PMR approach and comic media can improve every indicator of student activity and student curiosity which has an impact on increasing student achievement as well. The increase was in the form of teacher activity which increased in cycle II by 14.5 then student activity and curiosity of students who got 8.5 points in cycle II and finally an increase in the average achievement of students in cycle II by 82.5 which was included in the very high category.

The increase in students' curiosity and achievement can also be seen from the results of field notes which show that in the first cycle of meeting 1, students' curiosity has not increased, this is evidenced by the number of students who have not been able to ask questions or respond to the work of other students. students are also still unable to compare the results of their work with other groups, besides that, even though student learning achievement has begun to increase, it has not met the predetermined success indicators. In the first cycle of meeting 2, the findings obtained were that the attitude of curiosity and student learning achievement had increased, this was evidenced by the fact that many students had begun to respond to the teacher's questions, but there were still few students who were willing to respond to the work of other groups. many even

though they have not reached half of the number of students, besides that, student learning achievement has also increased, this is evidenced by the results of student evaluation at the second meeting.

The findings obtained in the second cycle of meeting 1 is that students' curiosity has increased, this is evidenced by the number of students who have started to have the desire to ask questions, but most students have the same questions, besides that students are also able to discuss independently in their groups. there are only 2 students who do not want to discuss with the group. Learning achievement at the first meeting of the second cycle also increased from the previous meeting, it can be seen from the results of the student evaluation at the third meeting. The results of the field notes also showed an increase in students' curiosity at the second meeting of cycle II. In the second cycle, more than half of the students who want to ask questions are in class V, students are no longer shy to raise their fingers when they want to ask questions, their questions have started to vary, besides that students are able to independently compare the results of their group. with other groups, but students still cannot want to ask questions about other topics that are still related to the material but are not presented by the teacher. The increase in learning achievement is also shown from the evaluation results of the fourth meeting students which far exceed the predetermined success indicators.

4 Conclusion

Realistic Mathematics Education (RME) assisted by comic media can improve learning achievement since the first cycle. In the first cycle the average score of students was 71.88 with a learning completeness of 77.5% which again increased in the second cycle to 82.25 with a completeness of 92.5%.

The Realistic Mathematics Education (RME) assisted by comics media can increase students' curiosity, this can be seen from the average points obtained by students in the first cycle of 4 with the criteria of student activity not being visible, then increasing in the second cycle to 8.5 with very visible criteria for student activity.

The practical implication that can be felt is that teachers can feel directly the changes in learning patterns made by students, so that they can create fun learning. Apart from that, the theoretical implication is that the proof of RME theory is still very suitable for use in the current mathematics learning process. We provide suggestions and recommendations for teachers, namely constantly improving their teaching abilities and enriching their knowledge about realistic mathematics learning approaches. And teachers must be able to take advantage of the surrounding environment as a medium in learning such as comics media.

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