



Experimentation with Realistic Mathematic Education Learning Approach to Problem Solving Skills on Social Arithmetic Material from Learning Style

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ABSTRAK

Keywords:

Experimentation;
Realistic Mathematic Education;
Problem Solving;
Learning Style.

The purpose of this research is to know the difference in problem-solving skills in social arithmetic material is reviewed from the learning style and which learning style has the best problem solving ability. The type of research used is the QUASI experiment. This study was conducted at MTS Putri NW Narmada 2018/2019 school year. The population in this study is all students of MTS Putri NW Narmada. Sampling techniques using Cluster Random Sampling, the sample used is Class VII F. Data collected with tests and tested with ANAVA one way. The results of the study stated that: Students with auditory, visual, and kinaesthetic learning styles have different mathematical problem solving skills. To further need a further test post Anava with Scheffe method. From the average comparison test results The average between the row and the column obtained the conclusion as follows: (1) in a double-comparison test between students with visual and auditory learning style of Ho received. Because Ho is accepted, students who have a visual and auditory learning style have the same problem solving skills. 2 In the double comparison test between students with auditory and kinaesthetic learning style is accepted by Ho. Since Ho is accepted, students with kinaesthetic and auditory learning styles have the same problem solving skills. 3 In the double comparison test between students with visual and kinaesthetic learning Styles Ho was rejected. Because Ho is rejected, there is a difference in problem solving skills between students with kinaesthetic learning style with students of visual learning style.



Article History:

Received: 19-10-2019
Revised : 24-12-2019
Accepted: 29-12-2019
Online : 30-12-2019



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<https://doi.org/10.31764/ijecca.v2i3.2100>

A. INTRODUCTION

In fact, mathematics is not separated from the life of the day, in the sense of mathematics has a practical use in the life of a day. All of life's problems that require careful and meticulous solution inevitably have to turn to mathematic. One of the learning approaches that use the problem of life as early as learning is realistic mathematics. In this realistic mathematics approach it is emphasized that its essence mathematics is human activity. In his studies, students were not merely passive recipients of ready-to-food mathematical materials, but

students needed to be given the opportunity to reinvent mathematics through their own practices.

A key principle of realistic mathematics is that students must actively participate in the learning process. Students must be given the opportunity to build their own knowledge and understanding. The concept of abstract mathematics needs to be transformed into a real estate for the students. This is the reason why it is called realistic mathematics learning. Of course it doesn't mean that RME should always use problems that exist in real life. The most important thing is that abstract mathematical problems can be transformed into real students' mind.

In realistic mathematics education, mathematic is presented as a process, as a humanity activity, not as a finished product. Reinvent element is very important. Lessons are presented through ingredients that correspond to the students environment. RME emphasizes the construction of a concrete bendable context as a starting point for students to acquire mathematical concepts.

Social arithmetic material is one of the materials studied by junior grade VII students. The material is very important to learn because it relates to activities in the life of the day and many problems that can be dug through social arithmetic material. Social arithmetic material can be conveyed using a realistic mathematical approach, as one characteristic of realistic mathematics is the use of context in learning so that it is suitable to be used in conveying social arithmetic material.

In mathematics learning many objectives have been set by the government as contained in the PERMENDIKNAS. But among those objectives there is one that is very important to be developed or improved is the problem solving capabilities.

According Polya (1973, in Wahyudi 2017), problem solving is an attempt to find a way out of a difficulty and achieve a goal that cannot be achieved immediately. Or in other words problem solving is the process of how to overcome an issue or question that is challenging that can-not be resolved by routine procedures that have been commonly done/already known.

W.W Sawyer has written in his book mathematician's delight, as quote Jacobs (1982:12) A statement below "everyone know that it is easy to do a puzzle if someone has told you the answer. That is simply a test of memory. You can claim to be a mathematician only if you can solve puzzles that you have never studied before. That is the test of reasoning." Sawyer's statement has shown that knowledge given or transformed directly to students will be less enhancing their reasoning. Sawyer's calls it only increases the ability to remember it. Whereas in the global era and the era of free trade, the ability to make a high level of thinking will greatly determine their success. Therefore, the learning of problem solving will be very decisive as well as the success of mathematics education, so that the integration of problem solving during the ongoing learning should be a necessity.

To demonstrate the importance of learning solving problems; Bastow, Hughes, Kissane, and Mortlock (1986, in Fadjar Shadiq 2014) Use the following Chinese adage. A person given a fish is fed for a day. A person taught to fish is fed for live. A person who is given fish is only enough to eat one day, but someone who is trained to find fish will be able to eat fish for his whole life. It is obvious that with this problem solving activities, students are trained to not only accept something that is already so like given a fish that is eaten and edible for a day only, but the students are trained like learning how to catch fish so that it can be used during students' lives

Based on the research conducted by Rahayu Sri Waskitoningtyas (2017), it was acquired that the learning style significantly affects the ability of problem solving. Bobbi de Porter in the works of Quantum book (Quantum Teaching, Quantum Learning and Quantum Learner) mentions that the learning style of students in particular to receive information is different. Bobbi de Porter divides the learning style in three groups, a visual learning group that accesses learning through visual imagery, a group of auditory learners who access learning through the image of listeners and a group of kinaesthetic learners who access learning through motion, emotion and physical.

Based on the results of initial observation in PONPES Nurul Haramain The daughter of researchers found that their ability in solving math problems was still low. This is based on the semester exam, which is presented in the following Table 1.

Table 1. List of Grade VII Students semester exam score MTS Putri NW Narmada

No	Class	Number Of Students	Students with value above the KKM (≥ 65)	Students with value under the KKM (< 65)
1	VII A	28	12 people	16 people
2	VII B	25	9 people	16 people
3	VII C	26	14 people	12 people
4	VII D	24	0 people	24 people
5	VII E	30	13 people	17 people
6	VII F	30	4 people	26 people
7	VII G	27	4 people	23 people
8	VII H	29	5 people	24 people
9	VII I	28	12 people	16 people

According to the table above, it is seen that there are still many students who have a value below KKM, the KKM used is 65. So researchers are interested in researching the Realistic Mathematic Education (RME) Learning approach to problem solving skills on social arithmetic material reviewed from the learning style.

B. METHODS

This research uses quantitative approaches with the type of pseudo-experimental research. Quantitative research is a study that uses numbers in data presentations and analyses that use statistical tests based on quantitative data collected through tests from research subjects with the aim of testing a predetermined hypothesis. The kind of research used in this research is a pseudo experiment according to Syamsuddin and Damayanti is a form of design that is a development of true experimental design, which is difficult to implement. This design has a control group, but it cannot be fully functional to control the outer variables affecting the performance of the experiment. Experimental quasi design is used because in fact it is difficult to get the control group used in research. The control class in this study is a class that serves as a sample of research that is controlled by the RME approach to know the extent of problem solving skills that are owned by the students based on learning style.

C. RESULT AND DISCUSSION

Based on the analysis of data can be learned that the researcher analyses by conducting a test of normality, testing homogeneity as a condition for conducting anava tests on the test scores of mathematical problem solving skills. From the results of the analysis is found that the three learning styles with the normal distribution and have the same variance (homogeneous), based on one way ANAVA test resulted H_0 rejected meaning students with visual, auditory, and kinaesthetic learning style has the ability to solve different mathematical problems. This results in accordance with the research conducted by Rahayu Sri Waskitoningtyas (2017) stating that the learning style significantly affects the ability of mathematical problem solving.

Before learning is done on social arithmetic materials, students are shared with polls to learn about the student's learning style. After that students are given a breakdown test to find out the problem-solving skills that the students have. In the matter is attributed to the problem of daily life. From that process students acquire knowledge by using problems that allow students to observe to obtain information needed for answers. With the knowledge that the different students already have, there are different ways and answers. The opinion of S. Nasution (2008:103) that the way of learning is done by pupils in capturing the stimulus or

information, how to remember, think, and solve problems. This is in line with the study stating that the ability to solve students' mathematical problems is very influential by learning students. So students can solve that problem in their own way. According to the theory of study expressed by Gagne (in Suwangsih and Tiurlina, 2006:79), in learning mathematics there are two objects that students can get, namely direct objects and indirect objects. Indirect objects include the ability to investigate and dismiss problems. By engaging in mathematical learning problems, students can develop ways to resolve the problem.

To further need a further test post Anava with Scheffe method. From the average comparison test results The average between rows and columns obtained the conclusion as follows:

1. In the double comparison test between students with visual and auditory learning style of H_0 is accepted. Because H_0 is accepted, students who have a visual and auditory learning style have the same problem solving skills.

The results of these acquired studies contradict with the research hypothesis. The research hypothesis mentions that students with auditory learning styles have better problem-solving skills than students with visual learning styles. This may be because each student's meeting records all what researchers have explained and written in a dips so that students can learn from the results.

2. In the double comparison test between students with auditory and kinaesthetic learning style is accepted by H_0 . Since H_0 is accepted, students with kinaesthetic and auditory learning styles have the same problem solving skills.

The results of these acquired studies contradict with the research hypothesis. The research hypothesis mentions that students with kinaesthetic learning styles have better problem-solving skills compared to students with auditory learning styles. This may be because the teaching methods used by researchers are the lecture methods, allowing students with auditory learning styles to absorb good information.

3. In the double comparison test between students with visual and kinaesthetic learning Styles H_0 was rejected. Because H_0 is rejected, there is a difference in problem solving skills between students with kinaesthetic learning style with students of visual learning style.

The results of this acquired research correspond to the research hypothesis. In the research hypothesis, there are differences in the problem between students with kinaesthetic learning style with students of visual learning style. Based on the average research studies have also gained that students' problem solving skills with kinaesthetic learning style are better than students' problem solving skills with visual learning style. The results of this research correspond to the Peeltian done by Teti Widiyanti which states that students with kinaesthetic learning style have higher solving ability than visual learning style students.

D. CONCLUSION AND SUGGESTIONS

It was concluded that there were differences in problem solving skills in implementing the RME approach to social arithmetic material. After conducting a test ANOVA carried out a follow-up test to find out which learning style has the best problem solving skills. Based on the results of a research analysis that students with visual and auditory learning styles have the same problem solving skills, students with auditory and kinaesthetic learning styles have the same problem solving skills. While students with kinaesthetic learning style have better problem-solving skills than students with visual learning style. Referring to this research and the discussion presented, the advice is to be done further research on the ability of problem solving math students and teachers need to know more deeply the style of learning that is learned by students to be a reference in determining a suitable learning method in teaching and learning activities.

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