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Teacher Skills in Applying Mathematics Learning Variations in Class IV at SD Negeri 1 Mrebet

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Abstract: The skill of applying learning variations is a basic skill that must be mastered by a teacher in teaching so that he can manage learning actively, effectively and efficiently. The skill of applying learning variations is a basic skill that must be mastered by a teacher in teaching so that he can manage learning actively, effectively and efficiently. This study aims to describe and analyze the results of research on teacher skills in applying variations to grade IV mathematics learning at SD Negeri 1 Mrebet. This research is a descriptive qualitative research. Sources of research data are school principals, teachers/homeroom teachers for grade IV, and grade IV students at SD Negeri 1 Mrebet. Data collection is done by interview, observation, and documentation. Meanwhile, to analyze the data, the researcher uses an inductive pattern, namely data reduction, data presentation, and drawing conclusions. The results of this study indicate that several variations were applied by the teacher in learning mathematics on cubes and blocks at SD Negeri 1 Mrebet, namely: 1) Variations in teaching styles, including variations in sound with an emphasis on important words, focusing attention with speech and gestures, making a moment of silence, making eye contact, variations of body movements and expressions. 2) Variations in the use of media and learning materials through variations in visual media such as modules, geometric shapes of cubes and blocks, variations in audio-visual media in the form of learning videos displayed through LCD projectors. 3) Variation of interaction patterns and activities, namely interaction patterns with multi-directional communication types and variations of activities such as lectures, discussions, questions and answers, observations or providing information through media images, videos, objects around, or with other media

Keywords: Teacher Skills, Skills in Applying Variations, Learning Mathematics.

A. Introduction

Education is a process with the aim of changing the attitudes, behavior and behavior of individuals or groups of people with the intention of maturing them through the process of education and training, the process of acting behavior, and how to educate them. Based on Law no. 20 of 2003, education is defined as an activity that is carried out consciously and has been planned to create a learning atmosphere and learning process so that students actively develop their potential to have abilities in religious spirituality, self-control, good personality, smart thinking, noble character, as well as the skills needed by himself, society, nation and state.

Based on Law No. 20 of 2003 article 3 concerning the National Education System, the aim of national education is to develop the potential of individual students to become human beings who believe and fear God Almighty, have noble character, are healthy,

knowledgeable, capable, creative, independent, and become democratic and responsible citizens.

Teachers are professional educators who have the main task of educating, teaching, guiding, directing, training, assessing, and evaluating students in early childhood education through formal education, basic education, and secondary education.

Professional teachers are teachers who are able to carry out their duties in teaching well. In the implementation of learning it is necessary to have skills that are used to create a smooth teaching and learning process effectively and efficiently. Some of the skills of a teacher in the teaching process are: (1) skills when opening, conveying material, and closing learning, (2) skills when delivering or explaining lessons, (3) skills in providing reinforcement material, (4) skills in providing and using instructional media, (5) skills in preparing learning steps, (6) skills in applying variations to learning, (7) skills in guiding discussions, (8) skills in classroom management, (9) skills in giving questions, and (10) skills in evaluating learning.

Variation is a skill that must be mastered by teachers in learning, to overcome student boredom, so that they are always enthusiastic, diligent and full of participation. Making variations in the teaching process is something that is very important in the behavior of teaching skills, what is meant by variation in this case is using various kinds of learning methods, the teacher's teaching style, for example, is variation in using learning material sources and the use of learning media, then there are variations when delivering material, meaning that variation when interacting between teachers and students.

Mathematics is one of the compulsory subjects that must be studied from SD/MI to the university level. Mathematics learning is learning that has the goal of training students in solving problems critically, carefully, effectively, and efficiently. Another definition of mathematics taught at the elementary education level is one of the subjects that teach simple calculation materials, such as addition, subtraction, multiplication, division and a combination of these calculations.

Based on preliminary observations that researchers conducted at SD Negeri 1 Mrebet kec. Mrebet district. Purbalingga on Friday, September 30 2022. The reason the researchers chose to study at SD Negeri 1 Mrebet was because the teachers at the school had implemented several variations in teaching, especially teachers who taught in grade 4 who had implemented several variations in the implementation of learning. Based on observations and interviews with the homeroom teacher of class 4 SD Negeri 1 Mrebet named Dwiani Nur Fatma, information was obtained that in carrying out the teaching and learning process carried out by the grade 4 teacher, he had applied various skills and also several variations of intonation, emphasis, eye contact, limb movement, interaction with students, as well as applying media variations in the learning process. However, in applying learning variations to the use of this latest curriculum, namely the independent curriculum, teachers still do not vary in their teaching practices.

The situation that often occurs in the classroom when mathematics lessons are still there are some students who have low motivation in taking lessons. This is caused by many factors, both external and internal factors of the students themselves. Factors from within students that influence student learning motivation include a sense of enthusiasm and willingness that exists within these students to take lessons as well as possible, and because

students may be happy or like mathematics so they are enthusiastic about following the lesson. Meanwhile, external factors that affect student learning motivation include the circumstances and conditions of the class, peers or classmates, even the way the teacher conveys learning.

The problem caused by low motivation that still occurs in grade 4 at SD is that when the learning process takes place there are still students who are sleepy in class, putting their heads on the table, there are some students who deliberately chat with their classmates, there are students who engrossed in their own activities such as drawing, and there are also students who deliberately disturb other friends, so that the class situation becomes noisy and learning is not conducive. Student problems that occur in the classroom during lessons have something to do with the way the teacher applies variations in the lesson. Therefore, based on the background of the problems above, the writer is interested in knowing how the teacher's relationship is in applying variations to learning. So the title in this study is "Teacher Skills in Applying Variations in Mathematics Learning in Grade 4 at SD Negeri 1 Mrebet".

B. Methods

The type of research conducted by researchers is descriptive qualitative research. Qualitative descriptive research is a research method that describes a certain state of the object or situation under study which the researcher then describes as it is.

The approach to qualitative descriptive research is research that emphasizes reasoning, definitions of certain situations, and is more widely used to examine the condition of natural objects or objects related to everyday life. In this study, the researcher conducted field research to obtain data and information directly by visiting the location taken by the researcher, namely SD Negeri 1 Mrebet, Mrebet District, Purbalingga Regency. Research conducted directly will provide an easier understanding for researchers about how teachers' skills apply variations in learning mathematics in grade IV at SD Negeri 1 Mrebet.

C. Results and Discussion

Implementation of the Application of Variation Skills in Class IV Mathematics Learning at SD Negeri 1 Mrebet

Based on the results of observations that have been made in learning mathematics in the material "Cubes and Blocks", the following findings and information are obtained:

1. Planning Stage

The learning planning stage that must be carried out is to make a lesson plan and prepare the material and media to be used. With the use of RPP the learning process becomes more focused and also directed according to what is desired, it also makes it easier for the teacher to convey material in learning.

The following is a description before the implementation of learning mathematics which uses several variations in the learning process activities.

- a) The teacher arranges lesson plans according to the material to be delivered.
- b) The teacher first prepares the media to be used in learning such as boxes in the form of cubes and blocks, laptops and LCD/projectors, etc.
- c) The teacher shows the cubes and blocks according to the material to be studied.

- d) From the media cubes and blocks the teacher gives a trigger question as an inducement so that students are active. The questions are like what are the shapes of cubes and blocks? How are the nets of cubes and blocks formed?
- e) Students answer teacher questions based on the knowledge of each individual student.
- f) The teacher asks students to group geometric shapes according to their shape, such as cubes, geometric groups whose sides are square, blocks of geometric shapes whose sides consist of squares and rectangles, while students are asked to look at the shapes in each grouping.
- g) Students are asked to present the results of observations on cubic and rectangular geometric shapes.
- h) The teacher straightens the answers while explaining the material.
- i) Students are asked to make a summary of the material.
- j) The teacher invites students to pay attention together in the video displayed by the teacher, the video contains nets of cubes and blocks.
- k) After watching the video, the teacher asks students to look at several forms of cube nets and blocks in mathematics textbooks.
- l) The teacher asks students to practice making 6 cube net shapes on a 3 cm grid lined paper in groups.
- m) The teacher gives directions to students who are still having difficulties in doing the task of making nets for building blocks.
- n) The teacher guides the appreciation and evaluation process, namely giving feedback between groups.
- o) The teacher invites students to make a geometric shape starting from drawing the nets to a geometric shape.
- p) The teacher gives directions to students who are still having difficulties.
- q) The teacher gives appreciation and evaluation.
- r) Students work on evaluation questions given by the teacher

2. Implementation Stage

Based on the results of observations made by researchers, in learning mathematics the material "Blocks and Cubes" the sub-theme of blocks and cubes, and cube nets at the first meeting on Saturday, May 6 2023, the implementation stage of learning mathematics at SD Negeri 1 Mrebet by implementing several variations in the process of learning mathematics about geometric blocks and cubes, and cube nets. At the implementation stage of mathematics lessons there are 3 types of activities, namely preliminary activities, core activities, and closing activities within 70 minutes.

The first activity is the preliminary activity, this preliminary activity lasts for 10 minutes, first of all the teacher greets students and asks readiness to learn, because the lesson at this meeting is in the first hour, so the teacher asks the class leader to lead the prayer before learning, after pray for the absent teacher to check who is going and not going and if there is someone who doesn't go due to illness, then pray for a speedy recovery. Furthermore, the teacher invites all students to clap enthusiastically before starting learning, enthusiastic applause is done with the aim of building the mood or feelings of students so that students feel happy when learning is carried out.

After students are excited and ready to start learning, the teacher asks students to prepare modules, worksheets, and student notebooks, the teacher asks students to open the math module on the material that will be discussed in this lesson, then the teacher conveys the topic of learning that will be studied, namely about building a cube room and beams. The teacher takes the media in the form of cubes and blocks and shows it to the students and the teacher asks "what do you know about the object that the teacher showed?" This question is a trigger question or an inducement question so that learning goes in two directions and students are active in learning. The teacher also invites students to group objects in the class according to their shape. After students are able to group these objects, students are asked to examine the objects and present them. Furthermore, the teacher reviews the answers from students, so the objects in this meeting are grouped into 3 forms, namely cube-shaped objects, blocks and objects other than cubes and blocks, followed by the teacher giving an explanation of the material characteristics of blocks and cubes and their components blocks and cubes. While the teacher is preparing the LCD projector and laptop that will be used to show a video about nets of blocks and cubes, students are asked to write a summary in their notebooks about the characteristics of blocks and cubes. After students finish making a summary and the media is ready, the teacher invites students to watch a video showing material for nets of blocks and cubes, students enthusiastically watch the video that is being shown. After watching the video the teacher then asks students to look at the shape of the nets of cubes and blocks in the mathematics module and the teacher asks "is there only one net or more than one?".

The next learning activity is that the teacher invites students to make 6 cube nets in groups that have 3cm ribs. first the teacher divides students into several groups, then each group prepares the tools and materials to be used, namely there is lined paper with boxes, pencils, scissors, paper glue, paper for gluing the cube nets. The steps and how to make it are: Shading the provided grid lined paper into a cube net, do it 6 times until 6 kinds of cube nets are formed, after drawing 6 kinds of cube nets then cut out the nets. the net, lastly, paste the cut nets on the paper that was provided earlier. Next, the teacher asks the groups one by one to come to the front of the class to show their work while presenting about the cube shape.

Variations applied by the teacher in learning mathematics this time include variations in the use of teaching materials and learning media in the form of visual media and audio-visual media. Visual media in the form of using teaching modules or textbooks, worksheets, cube-shaped boxes and blocks, practice of making cube nets into cubes. Audio-visual media in the form of videos regarding the material of nets of blocks and cubes. Furthermore, variations in interaction patterns with teacher-student and student-teacher patterns. While the variations in the activities in this lesson were observing boxes in the form of blocks and cubes, video observations, questions and answers, and assignments, the assignments at this meeting were making cube nets and presentations. For the implementation of face-to-face teaching variations that are carried out, namely focusing attention, variations of body movements and also variations of changing positions. In the variation of focusing attention, the teacher uses words and hand movements so that students return to paying attention to the teacher who is explaining, whereas in the variation of gestures, the teacher moves to and nods to signal that the student's answer is correct and shakes his head to indicate that the student's answer is still less precise. As well as for variations on changing positions, the teacher changes position

from being in front of the class then goes around the whole class to check if anyone is having difficulty doing the task, especially during the process of making 6 cube nets.

3. Learning Evaluation Stage

After carrying out the learning implementation stage, the next stage carried out by the fourth grade students of SD Negeri 1 Mrebet is the evaluation stage. By applying these variations in the learning process at the evaluation stage, the class IV teacher at SD Negeri 1 Mrebet divided the evaluation stage into written tests and oral tests. In the written form, the teacher draws from the results of working on the questions distributed by the teacher, and in the oral test, the teacher draws from student presentations in front of the class during learning, from questions and answers during learning, and also from drawing conclusions by students before learning is ended by the teacher.



Figure 1. Classroom Activity

D. Conclusion

Based on the results of the research conducted and based on the results of the analysis, it can be concluded in general that the teacher's skills in applying variations to grade IV SD Negeri 1 Mrebet have been well implemented by the class teacher during the learning process. From the results of research conducted, researchers can conclude that.

The teacher's skills in applying variations in learning mathematics for class IV SD Negeri 1 Mrebet have been carried out well, the teacher has applied variations in teaching styles which include variations in voice, concentration, making moments of silence, making eye contact, variations in motion and mimic, variations in changing positions, variations the use of media and learning tools as well as variations in patterns of interaction with students. By applying variations in learning, teachers can motivate and increase student interest in learning, while also making it easier for students to understand learning mathematics.

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