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Contextual Influence teaching to improve students' mathematical problem solving

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Abstract : Discovery learning because curriculum and learning are two things that are interrelated and inseparable even though both have different positions. Learning as an effort to teach students has a big influence on students. Learning pays attention to efforts to improve students' understanding of a scientific concept, including students being able to improve their understanding abilities because reasoning abilities together with the ability to underlie other abilities . Mathematics is one of the subjects that has an important position for the development of science and technology. Comprehension ability is very necessary in mathematics subjects because people who have high reasoning skills and are able to communicate their mathematical ideas or concepts well tend to have a good understanding of the concepts being studied and are able to solve problems related to the concepts being studied which will later have an impact on Discovery. student learning. The Ministry of National Education (Wachyar , 2012 :2) states that " Mathematical material and understanding Mathematics is two things that cannot be separated, namely mathematical material is understood through understanding and reasoning is understood and practiced through learning mathematics. " increase understanding mathematical Students in Elementary School , then Students in Discovery Learning Activities Study Mathematics required something meaningful learning . One of learning meaningful namely using a learning model mathematics that can stimulate desire know student in Study that is one of them with using a learning model *Discovery learning.*
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INTRODUCTION

Discovery Current learning methods , especially in mathematics subjects, still use conventional models, where teachers dominate Discovery. learning . Students themselves only receive information delivered by the teacher. As a result, students in Discovery Learning Learning tends to be passive, this is due to the lack of mathematical understanding that students have . In reality, the understanding mathematics is very important in Discovery learning mathematics . Learning outcomes student will increase when understanding mathematical student in learning mathematics accepted with Good .

In addition , in Discovery Learning requires active interaction between teachers and students. Teachers should not dominate learning; active student involvement is also essential in Discovery Learning. learning . To be able to create Discovery active learning , teachers need to increase creativity in learning, one of which is by providing variations in teaching to create Discovery Active and enjoyable learning so that students are motivated to learn. One variation of learning that teachers can implement is by using various meaningful learning models . . One of learning meaningful namely using a learning model mathematics that can stimulate desire know student in Study that is one of them with using a learning model *Discovery learning*

In reality, mathematics learning in elementary schools is currently still relatively weak. Where in Discovery In current mathematics learning, teachers still use conventional models so that students tend to be passive in Discovery Learning. lerninglearning , so understanding mathematical student Still classified as low . This also happened at SDN Cijati 1, Maja District , Lengka Majalengka Regency. Based on the results of observations with the fourth grade teacher of Cijati State Elementary School , Majalengka Regency, information was obtained that in Discovery Students' mathematics learning tends to be passive because they are less involved in Discovery Learning is less meaningful because the knowledge gained by students is limited to the material presented by the teacher. Furthermore, teachers do not use the appropriate learning model, Discovery Learning. Learning is still conventional so that students become monotonous .

These issues indicate that Discovery Mathematics learning still requires innovation and development of models that can improve understanding mathematical students in learning mathematics, namely by using the *Discovery model learning* . PBL is a problem-based learning model, where in Discovery In learning, students are faced with authentic problems so that students are actively involved in learning and can increase student learning motivation. Barrow (Huda, 2013: 271) defines 'Problem-based Learning (*Discovery)' as lerningoblem Based Learning*) is learning obtained through Discovery learning towards understanding the resolution of a problem'.

Research conducted by Nade Sulamiasih , et al (2015) with the title "The Influence *of Discovery lerningoblem Solving* for Mathematical Understanding and Discovery "Learning Mathematics Learning of Grade VI Elementary School Students in Cluster II, Teja District, Academic Year 2024/2025" shows that the problem-based learning model can increase students' motivation in mathematics learning with an average score of students' mathematics learning motivation with problem-based learning being 124.18 and an average score of mathematics learning motivation with conventional learning being 99.69.

Another study conducted by Oktavianus Eduardo (2017) with the title "The Effect of Problem-Based Learning on Learning Outcomes in Middle School" showed that there was a significant difference between students who participated in problem-based learning and students who participated in conventional learning ($F = 58.671$ and $Sig = 0.000$; $p<0.05$).

Based on several previous studies, it can be concluded that the *Discovery model Learning* is a learning model that is Discovery Learning can influence students' learning motivation in mathematics learning.

Based on this thinking, the author has conducted research on students' mathematical understanding abilities entitled: *" Discovery lerningoblem Based Learning* For Increase Understanding Students' Mathematical Ability in Mathematics Learning in Elementary Schools ".

METHOD

This research is a *Classroom Action Research* (CAR) research . This type of research is Classroom Action Research (CAR). This CAR was conducted in 2 cycles. Each cycle was conducted in two meetings and one final test, with a time allocation for two meetings per cycle, each for 2 lesson hours (2 x 40 minutes) and a final test conducted for 1 lesson hour (1 x 40 minutes). In the initial stage, the research problem was described and an action plan was determined. The action plan that had been prepared was then implemented by the researcher during classroom learning.

Location and Subject Study

The school that will be used as the research location is Cijati II State Elementary School, Majalengka . Subjects study is student Elementary School Class IV which consists of 28 people consisting of 16 students women and 12 students man .

Design Treatment

In general, this research was conducted through two cycles. with The four stages are depicted in the form of the following diagram:

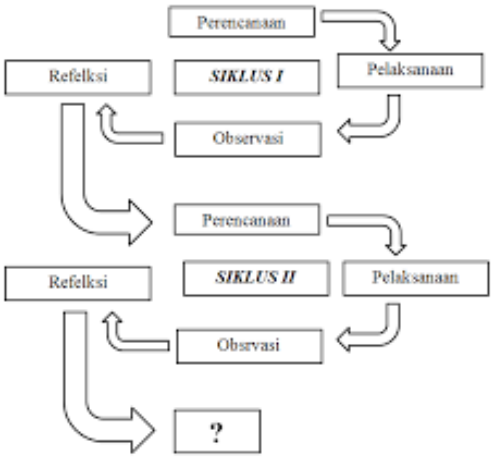


Figure 2
Research Design

RESULTS AND DISCUSSION

Study This aim For study the influence of the Discovery Learning model on ability solution problem mathematical student school basic research use approach Classroom Action Research (CAR) that was implemented in two cycles . Each cycle consists of from four stage , namely planning , implementation action , observation , and reflection . Subject in study This is student class V one of Public Elementary School in city X with 25 students . Indicator success in study This determined based on three aspect main , namely (1) average value ability solution problem mathematical , (2) percentage completeness Study students (with KKM = 70), and (3) percentage activity student in the learning process .

Cycle I: Initial Implementation and Identification Problem

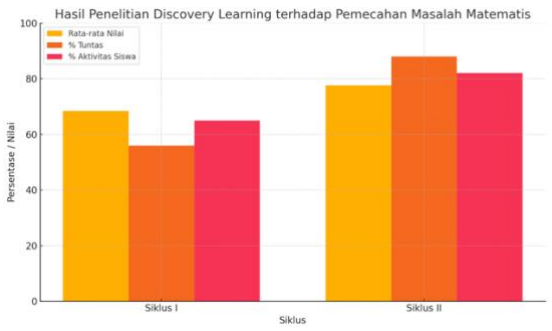
In cycle I, learning done with apply the appropriate Discovery Learning model with syntax developed by Bruner , namely : giving stimulation , identification problems , data collection , data processing , proof , and withdrawal conclusion . However , the results obtained show that implementation the beginning of this model Not yet give results maximum . From the results evaluation , it is known that the average value class was 68.4, and only 56% of students achieved completeness learning . This shows that almost half from student Not yet capable finish question solution problem with good . Observation to activity students also showed that involvement student in learning Still limited , namely only 65% of students are involved active . This is show that Not yet all student can follow channel learning Discovery Learning with good . Obstacles The main ones found include is lack of understanding student to steps data collection and processing , as well as unpreparedness student in Study independent and discuss in group .

Reflection from cycle I concludes that required modification in the implementation strategy learning , especially in matter give example concrete , more support intensive at the stage data exploration , and management time discussion .

Cycle II: Strategy Improvement and Results Improvement

Entering cycle II, improvement done on several aspect important . The teacher gives more instructions clear about stages in the Discovery Learning model, especially in the phases data collection and processing . In addition , teachers also provide more learning media interactive , as well as give room further discussion structured in group small . The result of cycle II shows quite an improvement significant . The average value class increase become **77.6** , and the total students who achieve completeness learn to rise to become **88%** . This is show that part big student has succeed understand and apply problem-solving strategies problem mathematical in a way effective . In terms of activity , occurs improvement participation student become **82%** . Students start used to discuss in group , convey opinion , and show ability develop a problem-solving strategy problem in a way logical and systematic .

Chart following show comparison results study between cycle I and cycle II in three aspect main : average value , percentage completion and activities student :



Significant improvement from cycle I to cycle II reflects the effectiveness of the Discovery Learning model in increase skills solution problem students . In addition , learning that is active and exploratory This give room for student For build Alone his understanding , which is in harmony with approach constructivist in learning .

Discussion Findings

Findings study This support Jerome Bruner's theory states that the learning process will more meaningful If student experience own discovery process concept . In the context mathematics , students No only Study formula in a way direct from the teacher, but also understand origin formula the through activity exploration and proof . The Discovery Learning model is also proven capable develop skills think level high , especially ability in strategize , test alternative solutions , and evaluate results . This is reflected from improvement ability student in finish questions solution non - routine and challenging

problems . Success The implementation of this model is also greatly influenced by the role of the teacher in directing , guiding , and facilitating the discovery process students . Therefore that , teachers need own skills in designing activity appropriate learning with characteristics of Discovery Learning and being able to manage class in a way effective . Involvement students who are improving from cycle I to cycle II shows that this model No only increase results learning , but also motivation and interest student in Study mathematics . Learning become more pleasant Because student given chance For active think and work The same in group . However Thus , the application of Discovery Learning is also demanding thorough preparation from teachers and readiness student For Study in a way active . At this stage early , students Possible experience confusion or difficulty in follow channel learning . Therefore that , it is necessary done mentoring intensive and adequate scaffolding .

From the results of two cycles action , can concluded that the Discovery Learning model provides influence positive to improvement ability solution problem mathematical student school basic . Improvement This covers aspect results learning , completion , and participation active student in learning . Success implementation of this model show importance learning that places student as subject active in build knowledge . The Discovery Learning model can be one of alternative approach innovative in learning mathematics that emphasizes the thinking process critical and problem solving problem .

Conclusion

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