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EFFORTS TO IMPROVE STUDENTS' MATHEMATICAL PROBLEM SOLVING ABILITIES OF CLASS VII F CIDAUN 1 JUNIOR HIGH SCHOOL TO BUILD FLAT MATERIAL THROUGH JIGSAW METHOD Abstract A passive danya class condition is s ne of the fa c tors causing low mathematical problem solving ability, where students are less involved in learning . Cooperative learning is an alternative in improvement . The research was conducted in Cidaun 1 Public Middle School , amounting to 30 people precisely in class VII.F in the even semester of the school year 20018/2019 . The results showed that the first cycle test obtained an average score of 43.7

% , after the implementation of the jigsaw type cooperative learning model, the cycle I I test obtained an average score of 63.8 % and the cycle I II test obtained an average score average of 72.2 % . The number of students who pass the increase on the first cycle of 16.66%, 36.67% for the second cycle and the third cycle of 63.34. Keywords: Problem Solving, Jigsaw Method , Build Flat Abstrak Adanya kondisi kelas yang pasif merupakan salah satu faktor yang menyebabkan rendahnya kemampuan pemecahan masalah matematis, dimana siswa kurang dilibatkan dalam pembelajaran.

Pembelajaran kooperatif menjadi salah satu alternatif dalam perbaikan. Penelitian dilaksanakan di SMP Negeri 1 Cidaun yang berjumlah 30 orang tepatnya di kelas VII.F pada semester genap tahun pelajaran 20018/2019. Hasil penelitian menunjukkan bahwa tes siklus I diperoleh skor rata-rata sebesar 43,7 %, setelah diadakan penerapan model pembelajaran kooperatif tipe jigsaw, tes siklus II diperoleh skor rata-rata sebesar 63,8 % dan tes siklus III diperoleh skor rata-rata sebesar 72,2 %. Jumlah siswa yang tuntas mengalami peningkatan yakni pada siklus I sebesar 16,66 %, siklus II sebesar 36,67 % dan siklus III sebesar 63,34 .

Kata kunci : Pemecahan Masalah, Metode Jigsaw, Bangun Datar INTRODUCTION In various fields of life, mathematics is a science that plays an important role. Many mathematical concepts are needed to solve everyday problems. That problem solving ability is very important in mathematics, both for those who will explore mathematics, for people who will apply it in other fields of study, or even can be applied in daily life1 . But in reality, based on the results of the testing of the reasoning skills and mathematical problem solving conducted in one school in the city of Bandung shows that the average score obtained by new students reaches 36%2.

Students can be able to solve problems if the learning process is done with the right learning process. Cooperative learning is one alternative in improving the quality of learning, especially in the Build Flat material. This learning model basically activates students learning together in one small group with heterogeneous abilities (high, medium, and low). Jigsaw model cooperative learning model is a model of teaching and learning consisting of four to six heterogeneous people and students work together positively and responsibly independently.

Group origin assigned to explore specific topics in the expert group and than explain to origin back to the group members. The model of jigsaw cooperative learning is shown in the form of a class action research scheme as follows : Figure 1. Chart of Type Jigsaw Cooperative Learning _ _ METHOD The method used in this study is classroom action research (CAR). Class action research is carried out with several corrective actions so that problems can be resolved3 . In the implementation of the PTK, there are two types of data that can be collected by researchers, namely: d ata obtained from observations of qualitative and quantitative d ata obtained from the evaluation test cycle I, II and III.

This research was conducted at Cidaun Cianjur 1 State Middle School class VII. Even semester 30 people had heterogeneous abilities. To analyze the improvement of student learning quality by looking at the test scores of student learning outcomes after learning or the 1Ruseffendi (2006). Pengajaran Matematika 2Shodikin, A. (2015). Peningkatan Kemampuan Pemecahan Masalah Siswa Melalui Strategi Abduktif-Deduktif Pada Pembelajaran Matematika 3 Yasri, A., Yahya, M., & Darmawang. (2017).

Penerapan Model Pembelajaran Kooperatif Tipe Jigsaw Untuk Meningkatkan Prestasi Belajar Siswa Pada Mata Pelajaran Alat dan Mesin Pertanian _ _ percentage of mastery learning obtained from the posttest score data, both in cycle I and cycle the next cycle is used the following formula : / to determine the success of the assessment refers to the technique of learning outcomes value categories as shown in Table 1. Table 1 Standa Categorization Scale Student Learning Outcomes in Flat Build Material Class VII. F at Cidaun 1 Public Middle School Score _Category _ _90.00 -100 80.00 - 89.00

70.00-79.00 <70.00 _Complete Special Well done Complete Not completed _ _ Based on the above table that the students are said to be thoroughly studied if the minimum completeness criteria (KKM) to be d ipenuhi by students is above 70, if a student gain value = 70 then the student achieve mastery of individuals, and finished in classical a maximum of 80% of the total students in class. RESULTS AND DISCUSSION Results 1.

Cycle I Test Results The mathematical problem solving process is different from the process of solving mathematical problems4 . If the problem cannot be immediately solved, then it is categorized as a mathematical problem. In the first cycle, the 1st and 2nd meetings are conducted as usual before apply action planned , the purpose as a comparison before application of learning cooperative model jigsaw type. The results of the test for the first cycle of the Build Flat material obtained results as in table 2 below : Table 2 Statistics of Student Mastery Score in Cycle I Statistics _Statistical Value _ _Subject Ideal score Highest score Lowest score Value Range Average value _30 100 85 20 65 43.67 _ _ Source: 2019 Descriptive Statistics Analysis 4 Hendriana, H., & Soemarmo, U. (2017). Penilaian Pembelajaran Matematika. _ _ Based on table 2 . obtained information that as many as 30 students of class VII.F

Cidaun-Cianjur 1 Junior High School conducted a test on Flat Build material . The average value is obtained 43, 67 with an ideal score of 100, where the highest score obtained is 8 5 , the lowest score is 20, then the range of scores is 60. The percentage of student test results on the first cycle test can be seen in tab 3. In this chapter : Table 3 . Original Category of Ability Test for Class VII Students . F Cidaun 1 Junior High School In Cycle I Value _Category _Frequency _Percentage _ _90,00-100 80.00 - 89.00 70.00-79.00 <70.00 _Complete Special Good Complete Not completed _0 4 1 25 _0 13,33 3.33 83,33 _ _total _30 _100 _ _ Source: 2019 Descriptive Statistics Analysis From the results of the first cycle test in table 3 above, it was found that out of 30 students of class VII.F Cidaun-Cianjur 1 Junior High School there were 5 students or 16.66 % had reached the graduation or competent limits, and there were still 25 students or 83.33 % reach limit has not passed or not yet competent.

Based on the results of the analysis of the data obtained, it was found several weaknesses and shortcomings found in cycle I. There are several things that need to be considered, so that in the second cycle there is an improvement then student activities that have not been maximized are attempted to be maximized in cycle II. The possibility of one of the factors causing low learning outcomes in Flat Build material is his learning method . So for the second cycle the learning method was replaced by the Jigsaw method . 2.

Cycle II Test Results In the second cycle, the third and fourth meetings used the jigsaw

method. After following the learning process build flat jigsaw cooperative learning model at the 4th meeting then do the test the first cycle I and obtained learning outcomes as illustrated in table 4 . Table 4 Static tick Value of Cycle II Learning Outcomes Statistics _Statistical Value _ _Subject Score ideal Highest score Lowest score Value Range Average Value a _30 100 85 40 45 63.83 _ _Source: 2019 Descriptive Statistics Analysis In table 4 , it shows that the average student learning value in the Flat Build material after the test in cycle II is 63.83 of the ideal value set at 100, the highest value obtained is 85 , the lowest value 40 and the range of values ??is 45 . The percentage of students' ability test results on the second cycle test can be seen on the tab 5. 5. below. Table 5 .

The results category of the Grade VII Student Ability Test . F Cidaun 1 Junior High School In Cycle I I Value _Category _Frequency _Percentage _ _90,00-100 80.00-89.00 70.00-79.00 <70.00 _Complete Special Good Complete Not completed _0 5 6 19 _0 16.67 20 63,33 _ _total _30 _100 _ _ Source: 2019 Descriptive Statistics Analysis From the results of the first cycle of the first test in Table 5 .Above found that 30 VII.F grade students of SMPN 1 Cidaun-Cianjur there are 11 students or 36,67% have reached the limit pass or incompetent, and there are 19 students or 63,33% have not reach bounds pass or not competent.

In the post-test II increase the students began to look in the flat build material, but has not reached the desired standard by researcher. Possibly one of the factors causing the low learning outcomes in the flat build material is the jigsaw method applied in learning is still new because it is not used to its use . Cycle III Test Results In the cycle III, the 5th and 6th meetings were used the jigsaw method.

After participating in the learning process of flat build material at the 6th meeting, a cycle III test was conducted and the results of the study were obtained as illustrated in table 6 . Table 6 Statistics of Cycle III Learning Outcomes Statistics _Statistical Value _ _Subject Score ideal Highest score Lowest score Value Range Average Value _30 100 95 50 45 72,17 _ _Source: 2019 Descriptive Statistics Analysis In table 6 , it shows that the average student learning value in the Flat Build material after the test in cycle III is 72.17 from the ideal value set at 100, the highest value obtained is 95, the lowest value 50 and the range of values is 45.

The percentage of students' ability test results on cycle III tests can be seen on tabel 7 . below this. Table 7 . Categories of Student Ability Test results Class VII.F Cidaun 1 Junior High School In Cycle III Value _Category _Frequency _Percent age _ _90,00-100 80.00 - 89.00 70.00-79.00 <70.00 _Complete Special Good Complete Not Completed _3 8 8 11 _10 26.67 26.67 36.67 _ _total _30 _100 _ _Source: 2019 Descriptive Statistics

Analysis From the results of the cycle III test in table 7. it was found that out of 30 students of class VII.F Cidaun-Cianjur 1 Junior High School there were 19 students or 63.34 % had reached the graduation or competent limits, and there was 1 student or 36.67 % not yet reached the level of graduation or not yet competent.

In post test III the increase in students in the Flat Build material almost reached the standard desired by the researcher. Possibly one of the factors causing low learning outcomes in the Flat Build material is the jigsaw method applied in learning still requires something interesting in order to foster students' enthusiasm for learning. Discussion In table 8 . The following are the results of observations collected and analyzed by the authors, and do reflection to see the shortcomings that occur. Table 8 .

Test Result Categories of Class VII-F Students of Cidaun 1 Public Middle School Observed Components _Meeting (F,%) _ _ _Cycle I _% _Cycle II _% _Cycle III _% _ _ _1 _2 _ _3 _4 _ _5 _6 _ _ _Student attendance Take lessons _28 _30 _96.7% _27 _30 _95% _2 8 _30 _95% _ _ Students who are Asking the teacher during the activity Take place _2 _3 _8, 6 % _3 _2 _8, 8 % _4 _3 _8, 6 % _ _Students who are Answer Questions from the Teacher / another friend _8 _9 _29.3% _10 _9 _33.3% _12 _13 _43.1% _ _ Students which a current P p ktif resentase _4 _3 _8.6% _3 _3 _10.5% _4 _4 _13.8 % _ _Students who Write / resume _26 _28 _93.1% _27 _27 _94.7% _27 _27 _93.1% _ _Students who don't Pay attention to leaning/play _4 _4 _13.8% _3 _2 _8.8% _2 _2 _6.9% _ _Source: Results of 2019 Research Data Analysis In table 8 . indicates that, d ari cycle I to cycle II, the average increased, except for attendance. The causes of presence are external factors, namely pain and permission.

From cycle II to cycle III, exactly after using a method that increases jigsaw component that is there at the Students who are Answer Questions from the Teacher / another friend from 33.3 % to 43.1% , students who were active at the time of presentation from 10.5 % to 13.8 % and students who do not pay attention during learning from 8.8 % to 6.9%, which means there are only a few who do not pay attention. As for the declining component, even then a slight decrease was students who asked the teacher during direct learning from 8.8 % to 8.6% and students who recorded from 94.7 % to 93.1%.

The causative factor is that students are ashamed of the teacher, students have discussed with their friends when they become a group of experts, and students who do not take notes consider themselves to be understanding. Next, we give a graph of the results of the students' mathematical solving ability each cycle: / Graph of completeness of student problem solving tests In this graph, it is explained that the number of students who complete is the first cycle of 16.66 % , cycle II is equal to 36.67 % and cycle III equal to 63.34%. While students who have not completed the material

Build Flat in the first cycle of 83.33 %, the second cycle was 63.33 % and the third cycle was 36.67%.

This means the ability to solve mathematical problems after learning about the Build Flat material with the jigsaw method the test results have increased even though it has not yet been finished in a classical manner with a maximum of 80% of the number of students in the class. Mathematics is a knowledge that has the characteristics of students to think logically, critically, diligently and initiative5. So, the researchers also expect these characters to be found in students who are studying mathematics so that they have good mathematical problem solving skills.

CONCLUSION Mathematics learning using a model jigsaw type cooperative learning can increase student activity, can create conditions so that students can active role and reduce learning tendencies (teacher centered). Ability solving mathematical problems of students with type cooperative learning models jigsaw as a whole is pretty good. Based on research, learning mathematics with learning models cooperative type of jigsaw, feasible for considered to be one learning in order improve mathematical problem solving skills students.

Because with to this learning, students tend to be more involved active in the learning process, so that you can learn more optimally . For teachers who will apply learning mathematics with models jigsaw cooperative learning need to pay attention to the right material to be delivered through mathematics learning with a jigsaw strategy.
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