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APPLICATION OF THE STAD TYPE COOPERATIVE LEARNING MODEL TO IMPROVE STUDENTS MATHEMATICS LEARNING OUTCOMES

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ABSTRACT

This classroom action research aims to improve the learning outcomes of FPB and Mathematics KPK materials for fourth grade students at SDN Patranrejo Berbek through the STAD model. Data collection techniques used are interviews, questionnaires, written tests, and documentation, with data analysis techniques in the form of quantitative qualitative data analysis. The results showed an increase in the results of observations of teacher activities and student activities. In cycles I and II, the results of teacher activity observations increased from 83% to 92%. In the observation of student activity, which increased from 83% to 94% in cycle II. The average score of students at the time of pretest and posttest also increased. In the first cycle the students' pretest results increased to 70% in the posttest to 79%, while in the second cycle the students' pretest results increased from 81% to 84%. Likewise, the students' mastery results increased. In the first cycle, the students' mastery results in the pretest were 30% and increased at the posttest to 69%. In cycle II, the results of completeness on the pretest were 86% to 95%. In conclusion, the STAD type of cooperative learning model in class IV SDN Patranrejo can improve student learning outcomes in Mathematics FPB and KPK.

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A. INTRODUCTION

Education is a strategic thing to realize the intelligence of the nation's life and improve human quality (Ohoiner, 2016). Education is an effort so that a person can develop his potential as a human being, so that he becomes quite capable in carrying out his own life tasks without the help of others (Feni, 2014). According to Law No. 20 of 2003 concerning the National Education System, Article 1 which states that education is a conscious and deliberate effort to realize the learning process so that students actively develop their potential. Education can be done in a learning system either formally, informally, or non-formally (Kosilah & Septian, 2020).

Learning itself is a system that contains a series of activities that have been designed in such a way as to influence and support one's learning process (Lefudin, 2017). The learning process generally includes the use of materials, learning models, learning strategies, learning approaches and learning strategies. According to stating that the learning model is a pattern that can be used to form a curriculum, design learning materials, guide learning activities, assessment systems and others so that learning and educational goals can be achieved (Khoerunnisa & Aqwal, 2020).

One of the subjects in school is mathematics. Mathematics is a field of study that is global in nature, where mathematics lives in various disciplines so that this field of study continues to develop according to the demands of the times, so that this field of study is taught at all levels of education (Kamarullah, 2017). Mathematics, which is global in nature, is like a queen as well as a servant to other disciplines. Mathematics in schools is generally a science obtained from organizing reasoning, shaping personality, instilling values, solving problems, and performing certain tasks. According to Russefendi in (Hasratuddin, 2022), mathematics includes elements that are not defined, definitions, axioms, and propositions. Therefore, understanding the definition, reasoning ability in learning mathematics can be started early. Students are required to be able to understand, think logically, solve problems in the operation of learning mathematics properly.

From the results of interviews conducted by researchers with fourth grade teachers at SDN Patranrejo, it shows that the learning outcomes of FPB and KPK materials are still at a low level. This can be shown by a statement from the class teacher, that 50% of the class students have scores below the KKM of 75, while the other 50% have scores above the KKM. Apart from learning evaluations and

daily tests, it is known that students' interest in learning and understanding is still low.

Based on the description above, the researcher wants to conduct a classroom action research to improve the learning outcomes of students who are still low in mathematics content. Elementary school students are in accordance with the stages of cognitive development, that students aged 7-11 years are in concrete operational development and have the characteristics of children who like to play, in groups, like new things (Bujuri, 2018). Therefore, researchers will make slight changes to the learning model used. By using a cooperative learning model of the student teams achievement division (STAD) type in learning mathematics for FPB and KPK materials.

Student Teams Achievement Division (STAD) is a cooperative learning model which in the implementation of learning consists of small groups consisting of 4-5 students who are selected heterogeneously (Agustini, 2018). In this learning model, students can interact with their group mates, so that they can also discuss the learning material. STAD learning model has advantages such as, students become more independent in constructing their own knowledge, students are free to seek information and learning resources, students can develop the ability to express ideas verbally and then discuss them with others, train the spirit of cooperation, acceptance, and concern for children, train students to be more responsible for their learning process, as a powerful strategy to develop academic, social, skills, time and mind management, interpersonal relationships, and other positive values, stimulate thinking skills high level and problem solving skills in students (Lamidi & Purwanto, 2013).

The relevance of the use of the STAD model to learning outcomes has been investigated by previous researchers, namely Lamidi and Purwanto, with the title "Application of the STAD Type Cooperative Model to Improve Student Learning Outcomes on FPB and KPK Materials in Mathematics Subjects Class V SDN Komplek Kenjeran II/506 Surabaya". The results of the study stated that when carrying out learning activities, teacher activities increased from cycle I and cycle II as much as 19.7%, while student activity increased by 21.2%, and student test results increased by 25%, and at the percentage of filling out the questionnaire is 90%. From these results, it can be concluded that the STAD type cooperative learning model can improve student learning outcomes in FPB and KPK materials.

Based on the problems found in the field and several studies showing that the Student Teams Achievement Division Type Cooperative Model has a positive effect on student learning outcomes, the researchers want to conduct classroom action research (CAR) applying the Student Teams Achievement Division Type Cooperative Learning model to improve Mathematics Learning Outcomes FPB and KPK Material Students

B. METHOD

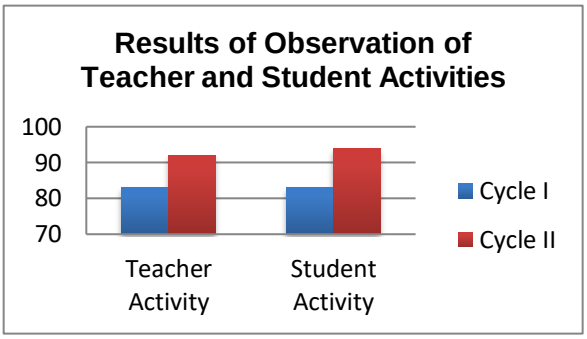
The research method used in this research is the classroom action research method. Classroom action research is research conducted to find out the consequences of an action on the research subject (Meutiana, 2015). According to Kemmis and Teggart, in this CAR model there are several cycles that must be considered, including planning, namely planning what kind of action, why, when, where, and how the action is carried out, the second is action, namely model planning and learning implementation plans, the third is observation, namely by making observations during the implementation of learning, and the last is the reflection stage, namely examining actions taken based on the data collected (Moleong, 2018). This research was conducted at SDN Patranrejo Berbek, by taking the research subjects of teachers and fourth grade students. This study uses interview data collection methods, questionnaires, tests, and documentation, with quantitative qualitative data analysis techniques.

C. RESULT AND DISCUSSION

Classroom action research was carried out in cycle I and cycle II in improving learning outcomes of FPB and KPK materials through the use of the STAD type cooperative learning model. According to (Mulyatiningsih, 2015), repetition of actions in classroom action research needs to be done with the aim of further ascertaining how far the impact of an action on something or convincing researchers that the action in cycle 1 has been successful or not. Therefore, in this study, the researcher took action in 2 cycles. Another reason is because during the process of implementing the STAD type cooperative learning model in stage I it was still considered less than optimal. The following is an analysis of the data that has been collected in the second cycle of the research that has been carried out:

1. Observation of Teacher and Student Activities

The following is a graph of the results of observing the activities of teachers and fourth graders at SDN Patranrejo Berbek after applying the STAD type cooperative learning model for FPB and KPK materials in cycle I and cycle II:

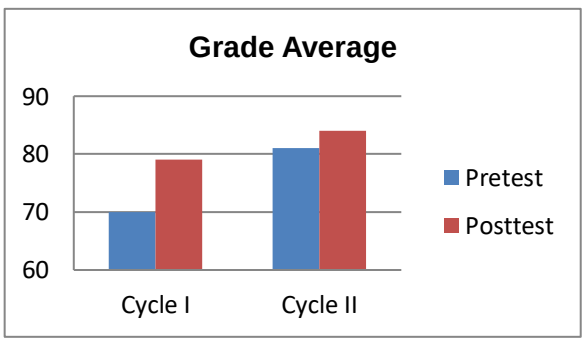


Graph 1. Increasing Teacher and Student Activities

Based on the graph of the results of observations of teacher and student activities, there was an increase from cycle I and cycle II. It is proven by the value of the observation results in the first cycle of teacher activity by 83% and in the second cycle there is an increase of 9 points, so that the acquisition value of teacher activity observations in the second cycle becomes 92%. While the acquisition value of the results of observations on student activities in the first cycle was 83% and in the second cycle there was an increase of 11 points, so that the acquisition value for observing student activities in the second cycle became 94%. The results obtained support the results of previous research (Yasir & Karlina, 2015), which shows that the STAD type cooperative model tends to be easy to implement, can help teachers and can have a positive impact on the quality of student learning in the classroom.

2. Improved Learning Outcome Scores

The following is a graph of the results of the pretest and posttest of fourth grade students at SDN Patranrejo Berbek after applying the STAD type cooperative learning model for FPB and KPK materials in cycle I and cycle II:

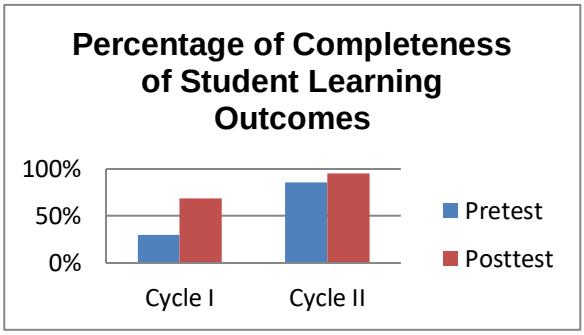


Graph 2. Grade Average

Based on the graph above, there was an increase in the average score of students from cycle I and cycle II. It is proven by the average value of the pretest results in the first cycle of 70% and the posttest cycle I increased by 9 points, so that the average value of the posttest results in the first cycle became 79%. Meanwhile, the average value of the pretest results in the second cycle was 81% and the posttest in the second cycle increased by 3 points, so that the average posttest score of students in the second cycle was 84%. This shows that the STAD type cooperative learning model can improve student learning outcomes. This also supports previous studies, one of which is from (Dewi & Supriyono, 2014), in his research proving that STAD type cooperative learning can increase the value of student learning outcomes, especially at the elementary school level.

3. Percentage of Completeness of Student Learning Outcomes

The following is a graph of the results of the percentage of student learning outcomes based on the pretest and posttest scores of fourth grade students at SDN Patranrejo Berbek after applying the STAD type cooperative learning model for FPB and KPK materials in cycle I and cycle II:



Graph 3. The percentage of complete student learning outcomes

Based on the graph of the results of the percentage of students' learning outcomes in the pretest and posttest in cycle I and cycle II, there was an increase from cycle I and cycle II. It is evidenced by the acquisition of the percentage of completeness in the pretest cycle I by 30% and in the posttest cycle I an increase of 39 percent, so that the percentage of completeness in the posttest cycle I becomes 69%.

Based on the complete learning theory (Trianto, 2012), a class is declared classically complete if it meets the number of students who have completed 85%. Therefore, in cycle 1 it is proven that the Student Teams Achievement Division type cooperative learning can increase the number of students who

complete learning in class, but do not meet the classical completion criteria. Therefore, the action was carried out again in the second cycle, then the results of the percentage of completeness in the pretest were 86% and the posttest increased by 9 percent, so that the acquisition of students' posttest mastery results in the second cycle became 95%. Based on these results, it shows that through cooperative learning the STAD type the number of students who complete learning increases and the criteria for complete learning are met.

Based on the results of observations, the average learning outcomes, and the percentage of learning completeness that has increased in each cycle, it can be concluded that the application of the STAD (Student Teams Achievement Division) type cooperative learning model to the FPB and KPK Mathematics subjects for students class IV SDN Patranrejo can improve student learning outcomes with the implementation of two cycles of class action.

D. CONCLUSION

Based on the results of classroom action research in two cycles conducted by researchers, it can be concluded that the application of the STAD (Student Teams Achievement Division) type cooperative learning model can improve the learning outcomes of fourth grade students at SDN Patranrejo on FPB and KPK materials in Mathematics.

E. REFERENCES

Agustini, A. T. D. (2018). Model Pembelajaran Student Team Achievement Division (STAD) dan Model Pembelajaran Teams Games Tournament (TGT): Dampak Terhadap Hasil Belajar Fisika. *Model Pembelajaran Student Team Achievmen*, *1*(2), 65–77.

Bujuri, D. A. (2018). Analisis Perkembangan Kognitif Anak Usia Dasar dan Implikasinya dalam Kegiatan Belajar Mengajar. *Literasi*, *IX*(1), 37–50.

Dewi, R. M. S., & Supriyono. (2014). Penerapan Model Pembelajaran Kooperatif Tipe STAD untuk Meningkatkan Hasil Belajar di Sekolah Dasar. *JPGSD*, *2*(3), 1–10.

Feni. (2014). *Pendidikan Sekolah Dasar*. PT Refika Aditama.

Hasratuddin. (2022). Membangun Karakter Melalui Pembelajaran Matematika. *PARADIKMA: Jurnal Pendidikan Matematika*, *6*(2), 130–141.

Kamarullah. (2017). Pendidikan Matematika di Sekolah Kita. *Al Khawarizmi: Jurnal Pendidikan Dan Pembelajaran Matematika*, *1*(1), 21–32.

Khoerunnisa, P., & Aqwal, S. M. (2020). Analisis Model-Model Pembelajaran. *Fondatia: Jurnal Pendidikan Dasar*, *4*(1), 1–27.

Kosilah, & Septian. (2020). Penerapan Model Pembelajaran Kooperatif Tipe Assure dalam Meningkatkan Hasil Belajar Siswa. *Jurnal Inovasi Penelitian*, *1*(6), 1139–1148.

Lamidi, & Purwanto. (2013). Penerapan Model Kooperatif Tipe STAD untuk Meningkatkan Hasil Belajar Siswa pada Materi FPB dan KPK pada mata Pelajaran Matemat. *Jurnal Penelitian Pendidikan Guru Sekolah Dasar*, *1*(1), 1–5.

Lefudin. (2017). *Belajar dan Pembelajaran: Dilengkapi dengan Model Pembelajaran, Strategi Pembelajaran, Pendekatan Pembelajaran, dan Metode Pembelajaran*. Deepublish.

Meutiana. (2015). Meningkatkan Prestasi dan Motivasi Belajar Siswa dengan Pengajaran Berbasis Inkuiri pada Siswa Kelas VII.3 SMP Negeri 2 Peusangan Bireuen. *Jurnal Ilmiah CIRCUIT*, *1*(1), 20–27.

Moleong, L. J. (2018). *Lexy J. Moleong*. PT Remaja Rosdakarya.

Mulyatiningsih, E. (2015). Metode Penelitian Tindakan Kelas. In *Modul Pelatiihan Pendidikan Profesi Guru: Fakultas Teknik, Universitas Negeri Yogyakarta*. Universitas Negeri Yogyakarta.

Ohoiner, O. E. (2016). Hubungan Latar Belakang Pendidikan dan Persepsi Pemanfaatan Media Pembelajaran dengan Kompetensi Guru Fisika. *Jurnal Pendidikan Matematika Dan Sains*, *4*(1), 43–53.

Trianto. (2012). *Model Pembelajaran Terpadu*. PT Bumi Aksara.

Yasir, M., & Karlina, E. (2015). Pengaruh Model Pembelajaran STAD terhadap Hasil Belajar Mata Pelajaran Akuntansi. *Research and Development Journal Of Education*, *2*(1), 53–65.