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Implementation of the Think Pair Share (TPS) Cooperative Learning Model to Improve Chemistry Learning Outcomes for Class X TKJ 1 SMKN 2 Palembang Students

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Abstract: Classroom action research using Think Phair Share (TPS) learning model in class X TKJ 1 SMKN 2 Palembang aims to improve students' learning outcomes and interest in learning chemistry. The study was conducted in two cycles, each cycle consisting of two meetings. The data were obtained by using observation sheet, questionnaire and test instrument of student learning result which was done at the end of the meeting. Improvement of student learning outcomes can be seen from the average of student learning outcomes before the action done (T0) of 70,6 with mastery learning 40%, an increase in cycle I (T1) to 80,5 with mastery learning 77,1% and in cycle II (T2) increased to 88,9 with learning mastery 88,6%. And students' interest in learning increased from 42,7%before the application of the TPS learning model to 79,6% after the determination of the TPS model in Cycle I (T1). While in in Cycle II (T2) students' interest in learning increased from 52,1% before the application of the TPS learning model to 89,15% after the determination of the TPS model .

Keywords: classroom action research, think phair share model, student chemistry learning result, interest learnin

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▪ INTRODUCTION

Indonesia is one of the developing countries which has goals and aspirations to improve the quality of its education as stated in the preamble to the 1954 Constitution in paragraph IV which reads "to make the life of the nation intelligent". The government realizes the nation's goals by building an education system with character and quality.

According to article 12 of Law No. 20 of 2003, Indonesian education is divided into three types, namely formal education, non-formal education and informal education. One form of formal education that prepares students to face the world of work is SMK (Vocational High School). SMK 2 Palembang is one of the largest and favorite vocational high schools in the city of Palembang. SMK 2 Palembang has 8 areas of expertise. Every area of expertise at SMK 2 Palembang studies chemistry subjects. Chemistry is a field of science that is included in the science family. Chemistry is closely related to human life, this is because chemistry studies natural phenomena around us.

Based on the results of preliminary observations carried out by researchers on class Only 40% are able to meet the KKM, whereas ideally for good learning outcomes the number of students who are able to meet the KKM is 85%. These low student learning outcomes can be influenced by the assumptions or thoughts of vocational school students who think that chemistry subjects are not important so that students' interest in studying chemistry is low.

Improving students' chemistry learning outcomes in cognitive and affective aspects is not easy. Teachers are required to be able to use innovative teaching media and teaching methods related to the material to be presented, so that the learning process is more interesting and not monotonous. One method that can be chosen to increase student interest and learning outcomes is the Cooperative Think Pair Share (TPS) learning model. With this learning model, students feel more interested in learning because students are taught to share opinions, be responsible and practice socializing with friends and classmates to solve a problem.

Based on previous problems and literature studies, the researcher felt interested and wanted to try to apply this TPS learning model to classes that would be studied later with the aim of improving and knowing the learning outcomes of class X TKJ 1 SMKN 2 Palembang students after implementing the Think Pair Share cooperative learning model (TPS).

According to researchers, this learning model is able to increase student activity in the classroom, increase students' self-confidence, then students can form and develop their own concepts, and with this learning model teaching becomes more student-centered, in accordance with the 2013 Curriculum. Therefore, researchers conducted research entitled "Application of the Think Pair Share (TPS) Cooperative Learning Model to Improve Student Learning Outcomes on Redox Material in Class X SMK 2 Palembang".

▪ METHOD

This research was conducted at SMK 2 Palembang in the even semester of the 2017/2018 academic year, which was carried out from 19 March to 28 May 2018. The research subjects were students of class 12 women. This Classroom Action Research (PTK) was carried out in two cycles. Each cycle has four stages, namely planning, action, observation and reflection. Each cycle is carried out in two meetings with a time allocation of 3 x 45 minutes per meeting.

Cycle 1 Learning Activities

Plan (Planning Stage)

Activities carried out at the planning stage are determining the learning material, namely acid-base solutions along with examples in daily life, then preparing a learning implementation plan, which will be implemented in the learning process in accordance with the Think Pair Share (TPS) cooperative learning model, preparing participant worksheets students for student learning activities, compiling observation sheets, compiling interest raises and compiling final evaluation instruments.

Do (Action Stage)

Preliminary Activities

The teacher opens the lesson by greeting, checking students' attendance, conveying the learning objectives. The teacher provides apperception by asking students several questions related to acids and bases. The teacher provides LKPD for discussion activities

Core Activities

Think

The teacher asks students to solve the problems contained in the LKPD individually The teacher assigns students to create a framework for thinking in solving the problems contained in the LKPD

Phair

The teacher asks each individual student to form a group in pairs and discuss how to solve the problems contained in the LKPD according to the results of their collective thinking

Share

The teacher asks each group in pairs to have a thorough discussion with their friends in class. The teacher asks each student in the pair group to provide suggestions and input in the discussion in class

Closing Activities

The teacher asks students to collect LKPD to the teacher. The teacher and students conclude the acid-base material that has been studied. The teacher asks students to work on the questions given by the teacher individually. The teacher presents the next learning topic. The teacher closes the lesson by saying greetings

Observation Stage

The observation stage is carried out during the learning process through the application of the Think Pair Share (TPS) learning model. Observations were carried out using an observation sheet that had been made previously. At this stage, observers are assisted in observing students during learning activities, equipped with research evidence in the form of photos when learning activities are carried out.

Reflection Stage

The reflection stage is carried out to evaluate the results of actions that have been carried out during the implementation of the action so that actions can be determined for the next cycle. At this stage, the results of the observations during the two meetings will be reviewed, analyzed and explained on all the data obtained. The implementation procedures for cycles II and III are the same as cycle I for cycle 2 learning activities

Plan (Planning Stage)

Activities carried out at the planning stage are determining the learning material, namely acid-base solutions along with examples in daily life, then preparing a learning implementation plan, which will be implemented in the learning process in accordance with the Think Pair Share (TPS) cooperative learning model, preparing participant worksheets students for student learning activities, compiling observation sheets, compiling interest raises and compiling final evaluation instruments.

Do (Action Stage)

Preliminary Activities

The teacher opens the lesson by greeting, checking students' attendance, conveying the learning objectives. The teacher provides apperception by asking students several questions about corrosion material. The teacher shows a video of corrosion. The teacher provides LKPD for discussion activities

Core Activities

Think

The teacher asks students to solve the problems contained in the LKPD individually. The teacher assigns students to create a framework for thinking in solving the problems contained in the LKPD

Phair

The teacher asks each individual student to form a group in pairs and discuss how to solve the problems contained in the LKPD according to the results of their collective thinking

Share

The teacher asks each group in pairs to have a thorough discussion with their friends in class. The teacher asks each student in the pair group to provide suggestions and input in the discussion in class

Closing Activities

The teacher asks students to collect LKPD to the teacher. The teacher guides students to conclude the material they have studied. The teacher asks students to work on the questions given by the teacher individually. The teacher conveys the next learning topic. The teacher closes the lesson by saying greetings

Observation Stage

The observation stage is carried out during the learning process through the application of the Think Pair Share (TPS) learning model. Observations were carried out using an observation sheet that had been made previously. At this stage, observers are assisted in observing students during learning activities, equipped with research evidence in the form of photos when learning activities are carried out.

Reflection Stage

The reflection stage is carried out to evaluate the results of actions that have been carried out during the implementation of the action so that actions can be determined for the next cycle. At this stage, the results of the observations during the two meetings will be reviewed, analyzed and explained on all the data obtained.

▪ RESULT AND DISCUSSION

Research Result

Data on student learning outcomes before the action (T0) was taken from odd semester test scores. Student learning outcome scores (T1) are taken from the final test scores of cycle I, followed by cycle II, student learning outcome scores (T2) are taken from the final test scores of cycle II.

Table 1. Recapitulation of student learning results (t0), (t1), and (t2)

Siklus	**Jumlah Siswa**	**Jumlah siswa yang tuntas (≥75)**	**Jumlah siswa yang belumtuntas (<75)**	**Rata – rata Hasil Belajar**	**Persentasi ketuntasan kelasikal**
SebelumTindakan (T_0)	35	14	21	70,6	40%
Siklus I (T_1)	35	27	8	80,5	77,1%
Siklus II (T_2)	35	31	4	88,9	88,6%

Students' interest in learning in the learning process is measured using an interest questionnaire. The interest questionnaire was given before and after implementing the TPS model per learning material title. A recapitulation of student interests can be seen in the following table; Table 2. Recapitulation of Student Interests for Each Cycle (T1) and (T2).

Table 2. Recapitulation of Student Interests for Each Cycle (T1) and (T2).

Siklus	JumlahSiswa	% Minat Sebelum Diterapkan Model TPS	% Minat Setelah Diterapkan Model TPS
Siklus I (T_1)	35	42,7	79,6
Siklus II (T_2)	35	52,15	89,15

Student activity in the learning process was observed using an observation sheet. A recapitulation of student activity per cycle can be seen in the following table;

Table 3. Recapitulation of Student Activity in Each Cycle (T1) and (T2)

Siklus	Jumlah Siswa	% Keaktifan Pertemuan pertama	% Keaktifan Pertemuan kedua	% Rata-rata Keaktifan
Siklus I (T_1)	35	50,15	61,21	55,68
Siklus I (T_2)	35	77,58	86,21	81,89

Discussion

Classroom Action Research (PTK) was carried out in class X TKJ 1 SMKN 2 Palembang by applying the Think Pair Share (TPS) learning model. Based on research data, there is an increase in student learning outcomes, student interest and activeness in learning. An increase in student learning outcomes occurs in each research cycle which is accompanied by an increase in student interest and active learning in each cycle as shown in table 1, table 2 and table 3.

The application of the Think Pair Share (TPS) learning model in cycle I shows an increase in student learning outcomes as shown in table 1 data. The average student learning outcome before action (T0) is 70.6 with a completion percentage of 40% in odd semesters, experienced an increase of 80.5 with a completion percentage of 77.1% in acid-base solution material in the even semester. The increase in learning outcomes for class This model also involves students actively searching for information through various available information sources, such as teaching materials, textbooks and the Internet.

Increased student learning outcomes can also be caused by increased student interest in chemistry subjects. If a student has an interest in learning then he will more easily accept the lessons given. This can be seen in the recapitulation data on student learning interest (table 2) which shows that student interest in learning chemistry has increased from 42.7% before implementing the TPS learning model to 79.6% after implementing the TPS learning model. According to the Ministry of National Education in Pambudi (2013), the percentage of student interest in learning is 79.6%, which is included in the good criteria. This was proven by 23 students out of a total of 35 students who said they were more interested and understood studying chemistry material using the TPS learning model and 12 students said that TPS learning could increase their learning motivation in chemistry lessons. Apart from causing an increase in student learning outcomes, interest in learning can also increase student activity, this can be seen in table 3.

The recapitulation results of student activity in table 3 show that the average percentage of student activity in cycle 1 was 55.68%. Where the percentage of student activity at the first meeting was 50.15% and at the second meeting it increased to 61.21%. However, according to theory, the percentage increase in student activity in this cycle is still included in the sufficient criteria, this is shown by only 18 students out of a total of 35 students actively searching for literature in solving problems contained in the LKPD and actively providing comments and responses during discussions on the second meeting, while at the first meeting there were 13 students who actively looked for literature in solving problems contained in the LKPD and 10 students gave comments and responses during the discussion.

After the implementation of cycle I (T1), although there was an increase in student learning outcomes, this was still not optimal because there were still several weaknesses that occurred during the implementation of actions in Cycle I, such as, at the first meeting there were still some students who did not discuss in their groups and did not using discussion time effectively, this can be seen in the observation data which shows that only 13 students with a percentage of 37.1%, while at the second meeting there were 18 people with a percentage of 51% of students who discussed in their groups. This is because students are reluctant to discuss and search for literature to answer LKP with their partners and students also do not want to ask the teacher, they prefer to do it privately. So that during the evaluation test at the first meeting with the subject of acid-base solution indicators, student learning outcomes were lower than the results of the evaluation test at the second meeting with the subject of determining pH and ionization rates of acid-base solutions. Apart from that, students are still adjusting to following the learning process using the Think Pair Share (TPS) learning model, students seem shy about asking the teacher and are not used to sharing information with friends in the group formed by the teacher.

The next weakness found in cycle I was seen from the results of observations which showed that at the first meeting 28.6% of students or consisting of 10 students were active in discussing and providing suggestions and comments in class. Meanwhile, at the second meeting, there were 18 students who were active in the discussion with a percentage of 51.1% and the other students just listened. This is because students are still not brave and confident in expressing their opinions in front of their classmates, so students become passive. So that in the first cycle, student learning outcomes were obtained at 77.1%, not yet achieving classical learning completeness, student interest in learning was 79.6%, which was classified as good, and student learning activity was 55.68%, which was still in the sufficient category. The high level of student interest in learning is not accompanied by high student activity, this is caused by students who are still too passive and shy to interact with friends or with their teachers and students are also still adjusting to the learning process that applies the TPS learning model, which is the learning model. Every student is required to actively participate in discussions in class and is required to have the courage to express his ideas in front of his classmates.

Based on the weaknesses and the students' learning completeness that was expected in cycle I, corrective actions were taken in cycle II, namely before entering learning, the teacher first provided motivation to students in order to increase students' interest in learning. The motivation provided by the teacher is in the form of videos and provides contextual examples. As well as providing the benefits and dangers of studying corrosion material at the first meeting and radiochemistry at the second meeting with the aim of growing students' interest and curiosity in the material to be taught. Teachers also guide students in discussions both in the form of group discussions and class discussions. In group discussions, the teacher comes to each group and asks about the difficulties faced and obtained by each in solving the problems contained in the LKPD, then the teacher provides direction in solving these problems. Meanwhile, in class discussions, the teacher guides the discussion in the class. The teacher asks each student from the pair group to express their ideas and opinions regarding solving the problem which is the topic of discussion with the aim of training students to speak in front of many people. Teachers give rewards to students who dare to provide opinions, ideas and comments in large discussions (class) with the aim of increasing students' self-confidence. The teacher straightens or confirms if there are opinions from students that are not in accordance with the topic of the problem. Apart from that, the teacher also guides students to conclude the results of discussions that have been carried out and confirm if there are misconceptions in concluding the results of the discussion.

In cycle II, after improvements were made to the weaknesses found in Cycle I, there was an increase in the average student learning outcomes of 80.5 with 77.1% completeness in cycle I (T1) then increased to the average student learning outcomes amounting to 88.9 with learning completeness of 88.6% in cycle II (T2) with the subject of corrosion and radiochemistry. The increase in learning outcomes is accompanied by an increase in student interest in learning and student activity in the learning process, this can be seen in table 2 and table 3.

In table 2 of the recapitulation of student interest data, it can be seen that student interest in learning has increased from 79.6% in cycle I to 89.4% from the average of two meetings, where for the first meeting on corrosion material student interest in learning was 87.9% and the second

meeting on radiochemical material was 90.4%. According to the Ministry of National Education in Pambudi (2013), the percentage of student interest in learning in cycle II is classified as very good. This can be proven from the questionnaire data which shows that 30 out of 35 students said it was easier to understand corrosion material by using the TPS learning model and 33 out of 35 students said the TPS learning model motivated these students to be active in the learning process regarding corrosion material at meetings. First. At the second meeting on radiochemistry material, 33 students said it was easier to understand corrosion material using the TPS learning model and 35 students said the TPS learning model motivated the students to be active in the learning process.

Tabel 3 menunjukkan data rekapitulasi keaktifan siswa mengalami kenaikan dari 55,68% pada siklus I menjadi 81,89% peningkatan ini termasuk kedalam kategori baik, dimana pada pertemuan pertama sebesar 77,58% dan pertemuan kedua sebesar 86,21%. Hal ini dibuktikan dari data hasil observasi pada pertemuan pertama dimana 22 orang siswa dengan persentase 63% berdiskusi dengan baik di dalam kelompok berpasangannya. Dan 18 orang siswa dengan persentase 51% aktif dan antusias dalam memberikan gagasan dan pendapatnya pada materi korosi. Sedangkan, pada pertemuan kedua untuk materi radiokimia keaktifan dan antusias siswa dalam berdiskusi meningkat menjadi 80% dengan jumlah siswa 28 orang siswa berdiskusi dan bertukar pikiran di dalam kelompok pasangannya dan 26 orang siswa dengan persentase 74,3% aktif memberikan komentar serta tanggapan pada saat berdiskusi di dalam kelas. Hal ini menunjukkan bahwa model pembelajaran TPS mampu meningkatkan hasil belajar siswa, minat dan keaktifan siswa dalam pembelajaran.

Peningkatan ketuntasan hasil belajar pada siklus II dari siklus I meningkat sebesar 11,5%. Hal ini dikarenakan telah dilakukannya beberapa perbaikan tindakan dalam menerapkan model pembelajaran TPS pada saat proses pembelajaran didalam kelas, perbaikan tersebut melihat dari hasil pembelajaran pada siklus I dimana terdapat beberapa temuan kelemahan-kelemahan dalam tindakan pembelajaran yang kemudian dilakukan tindakan perbaikan pada siklus selanjutnya yaitu siklus II, walaupun masih terdapat kelemahan lainnya namun hasil belajar siswa pada siklus II, telah mencapai ketuntasan klasikal sebesar 88,6%, yang artinya penelitian dapat dihentikan pada siklus II, hal ini dikarenakan penelitian yang dilakukan dibatasi pada hasil belajar ketuntasan klasikal yang harus dicapai sebesar 85%. Berdasarkan pemaparan di diatas dapat disimpulkan bahwa melalui penerapan model pembelajaran Think Pair Share (TPS) dapat meningkatkan minat dan hasil belajar siswa di kelas X TKJ 1 SMK Negeri 2 Palembang.

▪ CONCLUSION

There is an increase in student learning outcomes by implementing the Think Pair Share (TPS) learning model in class X TKJ 1 SMK Negeri 2 Palembang. The increase in learning outcomes can be seen from the average value of student learning outcomes before action (T0) was 70.6 with learning completeness of 40%, there was an increase in learning outcomes in cycle I (T1) with an average learning result of 80.5 and learning completeness 77.1% and it was found that student interest in learning also increased, from 42.7% before implementing the TPS learning model to 79.6% in the first cycle. Meanwhile, in the second cycle there was an increase from 52.1% to 89.1%. It was also found that student activity in the learning process was 55.68% in the first cycle and increased in the second cycle with an average learning outcome of 81.89%.

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