

The Effect of Cooperative Learning Models Type Student Team Achievement Division (STAD) and Intrapersonal Intelligence on the Learning Competency of Students Class X SMA Adabiah 1 Padang

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Abstract— Learning is a process of obtaining knowledge and experience that results in changes in behavior, as a result of learning to be achieved can be formulated in the form of learning objectives to be achieved with all the indicators. This lesson has not been implemented in the learning process at SMA Adabiah 1 Padang. In addition, the knowledge competence of students is still under the Minimum Completeness Criteria. U marsh to do that is by mela k ukan learning process with a model right. One of the *Student Team Achievement Division* (STAD) models. Meanwhile, the learning model commonly used by Biology teachers at SMAN 12 Padang is the discussion method. Apart from the learning model used, the teacher can also pay attention to the factors that affect student achievement. One of the factors is intrapersonal intelligence, intrapersonal intelligence is the intelligence to distinguish one's own feelings about something. This study aims to determine the differences in competence in the domains of knowledge , attitudes and skills of students between those who apply the STAD model in the experimental class and the discussion method in the control class , to determine the differences in the competence of knowledge of students between those who apply the STAD model to students with kecerdasan intrapersonal high and students with kecerdasan intrapersonal low, and to investigate the interaction between STAD model with interpersonal intelligence in the realm of competence hamper students' knowledge. This type of research is an experiment with the study design *Design Treatment by factorial 2 x 2* . The population in this study were students of class X IPA SMA Adabiah 1 Padang who were registered in the 2019/2020 school year. The sample was determined by *purposive sampling technique*. The instrument used was a multiple choice question sheet. Analysis of data normality test, homogeneity, and hypothesis testing with ANOVA test that use traditional SPSS applications. The results showed that there was a significant difference in knowledge competence between the experimental class and the control class, where the knowledge value of the class that applied the STAD model was higher than the control class.

Keywords — Cooperative Learning Models, Team Achievement Division (STAD), Intrapersonal Intelligence.

I. INTRODUCTION

Learning is a process of gaining knowledge and experience that results in changes in behavior in individuals due to interactions with their environment (Amri, 2013). These changes occur consciously, meaning that individuals who learn will realize that there are changes in them. The changes that occur will be aimed at getting something better than before and will be directed at the goals to be achieved. Changes in learning are not only temporary or temporary, but are permanent and continuous. Therefore, changes in the learning process include changes in overall behavior in attitudes, skills, knowledge and so on (Slameto, 2010).

Learning is an effort made by educators that causes students to carry out learning activities (Amri, 2013). In the learning process, there is a change in behavior as a result of learning to be achieved can be formulated in the form of learning objectives to be achieved with all the indicators (Ruhimat, 2011).

Based on the Basic Law number 20 of 2003 concerning the National Education System, it is explained that education is a conscious and planned effort to create an atmosphere of learning and the learning process so that students actively develop their potential to have religious spiritual strength, self-control, personality, intelligence, noble character. as well as the skills needed by himself, the community, the nation and the state.

In Law number 32 of 2013, it is explained that education is carried out through formal education and non-formal education. Non-formal education is a path of education outside formal education that can be implemented in a structured and tiered manner. Formal education is an educational path that is structured and tiered consisting of basic education, secondary education and higher education. School is a formal education environment, because in schools a series of planned and organized activities are carried out, including activities in the context of the learning process in the classroom.

In accordance with the 2013 Curriculum students are no longer the object of education, but rather as subjects by participating in developing existing material. Because the purpose of the 2013 Curriculum is to encourage students to be active in any learning material (Kurinasih, et al, 2014). In the structure of the 2013 Curriculum, subjects in high school consist of compulsory subjects and specialization subjects.

The compulsory subject group aims to provide knowledge about the nation, language, attitudes as a nation, and the ability to develop logic, recognition of the physical and natural environment, physical fitness and cultural arts. Subjects that are included in the compulsory subject group are religious education, Pancasila education and citizenship, Indonesian, mathematics, history, English, cultural arts, sports and crafts.

The group of specialization subjects aims to develop students' interests in accordance with their scientific interests in higher education, and to develop their interests in a scientific discipline. There are three groups of specialization groups, namely the mathematics and science specialization group, the social specialization group and the language specialization group. For the mathematics and science specialization group, the subjects consist of mathematics, biology, physics, and chemistry (Majid, 2014).

Biology is a subject that studies living things and their environment. Biology studies something that is closely related to the daily life of students, therefore biology must be attractive to students. However, based on the results of interviews and observations with Mrs. Kambarni S .Pd. who is a biology teacher at SMA Adabiah 1 Padang, it was found that student learning outcomes in biology subjects were still low. Student learning outcomes can be seen in Table 1 below.

Table 1.The Average Value of the Biology Subject in the Mid-Semester

No.	Class	Value average
1.	X IPA 1	54,06
2.	X IPA 2	50,10
3.	X IPA 3	58,94
4.	X IPA 4	44,10

Source: Biology teacher at SMA Adabiah 1 Padang

The minimum completeness criteria (KKM) for Biology lessons at SMA Adabiah 1 Padang is 75. In Table 1. it can be seen that the biology scores of students have not yet reached the KKM set by the school. Based on the results of interviews with teachers at school (can be seen in Appendix 1), in August 2019 information was obtained that in the learning process, the teacher applied the lecture method, the discussion method equipped with LKPD in the learning

process. However, there are still many obstacles that cause low student learning outcomes. According to the teacher, some of the obstacles faced are such as some students are less active in discussions, active students are only smart students in class, lack of interaction between teacher questions and answers with students and with others, as well as students' lack of interest in the learning process of biology, which should be interesting because it is closely related to everyday life.

Based on the results of interviews that were also conducted with several students at school, it was found that in the learning process, especially during discussions, only a few students were active. For example, there are 5 group members, only one or two people who are active in learning. According to students, group members who are not active in the group are not responsible for the assignment given in the group. They assume that even though they are not actively involved in the group, the group assignment will also be completed because there are several friends working on it. They will also get the same value as their group mates, because the value given is the group value not the individual value.

In this case, teachers must be able to develop teacher competencies, especially pedagogical competencies. Pedagogic competence is the ability to understand students and be able to design learning including strategies and methods and learning models applied by the teacher. So as to be able to make students actively participate and pay more attention to the learning process.

Teachers are expected to be able to choose strategies and methods and models used in learning by taking into account the internal factors of their students. Based on the problems described, one way is that the teacher can use the *Student Team Achievement Division* (STAD) type of learning. STAD type of learning can optimize student participation in learning so that the learning process is more student-oriented. With STAD students are able to focus their attention on the learning process, so that it will be able to increase student motivation in following the learning process. Smart students can become tutors for friends in their group (Ningsih, 2015).

The type of STAD learning has characteristics that can answer problems, namely the type of STAD learning requires individual skills and a sense of responsibility in the group, and students who do not dare to ask the teacher can ask their friends in their group (Putra, 2013). STAD type of learning focuses on working in groups to solve and understand concepts or materials. Teamwork is prioritized by not

forgetting individual achievements as measured by individual progress scores (Hakim, 2015). Students who have low abilities will be greatly helped by the type of STAD learning because the members of each group are arranged to approach heterogeneous, so that if they encounter difficulties it will be greatly helped by clever students (Dewi, 2015).

Apart from the learning model used, the teacher can also pay attention to the factors that affect student achievement. These factors can be divided into three types, namely internal factors, namely the state / physical condition of students, external factors, namely environmental conditions around students, learning approach factors, namely types of student learning efforts which include strategies and methods and models used in learning (Syah, 2005).

Internal factors possessed by students have a considerable influence on the achievement of student learning competencies. One of the internal factors is intelligence. Intelligence is defined as the ability to solve problems that occur in human life. Intelligence is an important part used in learning, is used in solving problems and doing all things that are beneficial to other humans (Santrock, 2007).

Garner in Efendi (2005) proposes a new theory of intelligence. The theory of intelligence is a theory of multiple intelligences. The theory of multiple intelligences challenges old beliefs about the meaning of intelligence. Garner argues that our culture has focused too much attention on verbal and logical thinking and ignores other knowledge. Garner stated that there are several intelligences that should be taken into account, one of which is intrapersonal intelligence (Siregar and Nara, 2010).

Intrapersonal intelligence is intelligence that moves within oneself, namely intelligence in distinguishing one's own feelings about something (Efendi, 2005). A person whose intrapersonal intelligence is very good, can easily understand his own feelings, distinguish various kinds of emotions, and use his understanding to guide his life (Siregar and Nara, 2010). The person is also able to recognize the weaknesses that exist in himself, able to do self-reflection and try to improve himself (Santrock, 2007). So that by paying attention to student's intrapersonal intelligence, the teacher can know the extent to which the student understands himself and his obligations and goals in life, so that students are expected to be able to learn better if they know these things.

Based on the description above, a research will be conducted with the title "The Effect of the Application of

Cooperative Learning Model Type *Student Team Achievement Division* (STAD) and Intrapersonal Intelligence on Learning Outcomes of Class X Students of SMA Adabiah 1 Padang".

II. METHODOLOGY

This type of research is a quasi-experimental study with a 2×2 *Treatment by Factorial design*. In this study, students were divided into two classes, namely the experimental class and the control class. K Secondly fine grade class ex perimen and controls were given *questionnaires intrapersonal intelligence* to be filled by each student. Experimental class was given treatment by applying the learning model *STAD* s edangkan the control class applied learning models used to the school that is *the method of discussion*.

After that, both the experimental and control classes were given a posttest. The instrument used was a knowledge test question sheet in the form of multiple choice questions. Data analysis using normality test, homogeneityt est, and hypothesis testing using the SPSS application.

III. RESULTS AND DISCUSSION

a. Student knowledge domain

Table 1. Students' knowledge scores

Class	Average Value of Knowledge
Experiment	78.29
Control	61.77

Table 1 .shows a summary of the competence of knowledge in which the experimental group gained an average value of 78.29 while the control average value of 61.77 . It can be seen that the results of the experimental group's knowledge competency are better than the control class. Furthermore, the analysis prerequisite test will be carried out which includes the normality test, homogeneity test, and a nova test between the knowledge competence of students who apply the STAD model and students who apply the discussion method and the results can be seen in Table 2 .

Table 2 . Results of the Prerequisite Test for Knowledge Competency Analysis

Parameter	Class		Information
	Ekspe - rimen	Cont rol	
Average	78.29	61.77	Experiment > Control
Normality test	Sig = 0.200 $\alpha = 0.05$	Sig = 0.069 $\alpha = 0.05$	Normally Distributed
Homogeneity Test	Sig = 0.944 $\alpha = 0.05$		Homogeneo us Variance
Intrapersonal intelligence	0.484		Not significant
Hypothesis testing (anova test)	Sig = 0.712 $\alpha = 0.05$		No interaction

Table 2 . shows the average knowledge competency value of the experimental group and the control group along with the normality test value, homogeneity test and ANOVA test, With the average value of the knowledge competency of the experimental group that was higher than the control group and the data that was homogeneous and normally distributed, while the significance value was <0.05 , it can be concluded that the knowledge competence of students learning to use the STAD learning model was better. than the discussion method .

Table 2 also shows the learning competencies realm of knowledge of students with all cerdasan intrapersonal high and students with all intrapersonal intelligence low STAD model learning does not have a significant effect on the competence of learning the realm of knowledge of students who follow the teaching method of discussion. As well as there is no interaction between learning model and intrapersonal intelligence to effect competence of knowledge of students.

b. Student attitudes domain

Table 3. U test scores in the domain of students' attitudes

Class	Significance	Conclusion
Experiment		

Control	0.0 18	Significant
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Based on Table 3, it is known that the significance value of students' knowledge competencies is 0.0 18 . This indicates that the sig. <0.05, which means that the learning competence of the attitudes of students who follow the STAD learning model has a significant effect on the learning competence of the attitudes of students who follow the discussion method learning .

c. Student Skills Domain

Table 4. The value of the student's skill domain with u test

Class	Significance	Conclusion
Experiment	0.0 00	significant
Control		

Based on Table 4, it is known that the significance value of the competence skills of students is 0.000. This indicates that the sig. <0.05, which means that the learning competence in the realm of skills of students who take the STAD learning model has a positive effect on the learning competencies of the skills domains of students who take the discussion method learning .

1. Discussion

a. Achievement of Knowledge Domain

Based on the results of research that has been carried out on the competence domain of knowledge, it is found that the ST AD learning model can improve the learning competence of students. From the average value of students' learning outcomes, it was found that the experimental class obtained a higher score, namely 78.29 than the control class, namely 61.77. This type of STAD learning requires individual skills and a sense of responsibility in groups, and students who do not dare to ask the teacher can ask their friends in their group (Putra, 2013). STAD type of learning focuses on working in groups to solve and understand concepts or materials. Teamwork is prioritized by not forgetting individual achievements as measured by individual progress scores (Hakim, 2015).

The first stage in the syntax of the ST AD learning model is that the teacher prepares activity sheets and answer sheets that will be studied by students in cooperative groups, then the teacher assigns students to heterogeneous groups of 4-6 people.

The second stage of the teacher emphasizes what students will learn in groups, and informs important things through the Whatssup application group to motivate students' curiosity about the concepts they will learn.

The third stage, the teacher distributes LKPD to each group as material to be studied through the Whatssup application group teacher. The online learning time provided by the school for each subject is very short, only 1 hour so that students are given the opportunity to discuss outside of online learning time and have discussions outside the class group using the Whatssup application to work on LKPD with their respective group members to avoid meeting people much to stop the spread of Covid-19 that is currently happening.

The fourth stage, conducted online discussions at the school hours that have been determined by the school, namely class X IPA 1 on Monday and X IPA 3 on Thursday for 50 minutes independently. The discussion is carried out in a way, the teacher chooses which group will present the results of their discussion. This is done so that each group must understand the material they have discussed. After that, the selected group sent the results of their discussion in the form of a chat and a picture of the previously worked LKPD. Then given time for the audience to read and understand the results of the group discussion. After that, the audience who wants to respond to the discussion results will be given time to submit their responses via chat. The audience's response will be responded to by the group, and if there are things that are not understood by students, the teacher will help provide responses about the learning material.

The fifth stage is at the end of each meeting, a quiz is carried out via *google form* . From the results of the development value of each meeting , the award for group achievement is given in levels of appreciation such as good, great, and super groups (Majid, 2013).

In the control class, the learning competence of students in the realm of knowledge is lower and tends to be less active in learning compared to the experimental class because the control class uses conventional learning. Participants are students in the control classes are not very active in the learning process for each member of the group is not imposed on the value of responsibility progress that will affect the value of group members. So that not all students understand the material seriously because they think that the scores in one group will be the same even though the student does not understand the learning material. This can be caused by a variety of factors, both internal factors such as prior

knowledge of learners, in line with the opinions Setyowati (2012) that the prior knowledge of learners is the ability that is already held by the participant students before he followed the lessons will be given, as well as external factors such as models learning given by the teacher is in accordance with the subject matter or not.

So the learning process in the two sample classes, namely the experimental class and the control class, has a quite clear difference. The experimental class using the application of the ST AD model has an average value of competency in the domain of knowledge better than the average value of competency in the domain of knowledge in the control class using conventional learning. Therefore it can be concluded that the STAD model is effective in learning.

b. Achievement of Learning in the Domain of Attitudes

Ratings learning outcomes of students in the realm of attitudes conducted by observers at each meeting, data showed the attitude sphere of competence participant students in the experimental class is better than the attitude of the participants competence of students in the control class. On average, the competence of the attitudes of students using the STAD learning model obtained good criteria, while the competence in the domain of attitudes in the control class obtained sufficient criteria .

Participants are students in the experimental class is more active and enthusiastic when asked, to answer questions and have a high response in answer to problems that arise in the learning material. The high level of cooperation in discussions, because students are responsible for solving problems and answering the questions that have been given. This is in accordance with what Yong (2009) stated that discussion of students in small groups can increase the activity of students so that it becomes motivation that can improve student learning outcomes. The learning process in the control class using conventional learning models, students are still less able to cooperate, are not responsible for discussions, are less interested in thinking and are active in the learning process. This is because learning that does not emphasize the sense of responsibility of students will make students not really care about the learning process. In contrast to the experimental class which uses the ST AD learning model, during the discussion students feel they have a responsibility for themselves and make students care about the learning process so that the learning process will be better.

Based on the explanation above, it is concluded that the learning competence in the attitude of students who follow

the STAD learning model is better than the learning competence in the domain of the attitudes of students who take conventional learning.

c. Achievement of Learning in the Skills Domain

The assessment of students' learning outcomes in the realm of skills carried out by the observer at each meeting showed that the competency data of the competence of students in the experimental class was better than the competency skills of students in the control class. Competence in the realm of skills of students using the ST AD learning model obtained good criteria . While the competence in the domain of skills in the control class obtained sufficient criteria . The high acquisition of competence in the realm of skills in the experimental class shows that learning using the ST AD model has a significant effect on students, where students are required to be responsible for the tasks given in writing the results of reports neatly, attractively, informatively and easily understood.

Competence in the domain of students' skills in the control class using conventional learning models, students are still not good at doing the tasks given because students do not have a sense of responsibility in doing the task. This is because learning that does not emphasize the sense of responsibility of students will make students not really care about the learning process and the assignments given

d. Achievement of Learning Competencies based on Intrapersonal Intelligence

Intrapersonal intelligence is intelligence that moves within oneself, namely intelligence in distinguishing one's own feelings about something (Efendi, 2005). A person whose intrapersonal intelligence is very good, can easily understand his own feelings, distinguish various kinds of emotions, and use his understanding to guide his life (Siregar and Nara, 2010). The person is also able to recognize the weaknesses that exist in himself, able to do self-reflection and try to improve himself (Santrock, 2007).

Student's intrapersonal intelligence is measured using a questionnaire distributed in the sample class. Then the researchers assessed the results of measuring each student's intelligence. Based on the results of the assessment of intrapersonal intelligence, students are divided into two groups, namely students who have high intrapersonal intelligence and students who have low intrapersonal intelligence. Based on the results of data analysis previously

described, it was found that students' intrapersonal intelligence did not affect student learning competencies. And there is no interaction between STAD learning models and students' intrapersonal intelligence.

IV. CONCLUSION

Based on the research that has been done, it can be concluded that difference between use learning models STAD with the application of the method of discussion to learners' knowledge. There is no influence of students' intrapersonal intelligence on the learning competence of students' knowledge domains. As well as there is no interaction between learning model STAD with intrapersonal intelligence students in to effect competence of knowledge of students.

In the realm of attitudes, it was concluded that the learning competences of the attitudes of students who took the STAD learning model had a significant effect on the learning competencies of the attitudes of students who took the discussion method learning.

In the realm of skills, it was concluded that the learning competences of the skills of students who took the STAD learning model had a significant effect on the learning competences of the skills of students who took the discussion method learning.

ACKNOWLEDGMENTS

Thanks to Mrs. Dr. Violita, M.Si as the supervisor, Mr. Dr. H. Syamsurizal, M.Biomed., And Mr. Dr. Abdul Razak M.Si as a contributing lecturer.

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