

# THE IMPLEMENTATION OF COOPERATIVE LEARNING MODEL TYPE JIGSAW TO IMPROVE STUDENTS' ACCOUNTING LEARNING ACTIVITY

## IMPLEMENTASI COOPERATIVE LEARNING MODEL TYPE JIGSAW UNTUK MENINGKATKAN AKTIVITAS BELAJAR SISWA

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### Abstract

The type of this research is Classroom Action Research aimed to improve students' Activity of Learning of Grade X AK 1 SMK Negeri 1 Klaten Academic Year of 2014/2015. The research is done in two cycles used two kinds of data collection techniques, i.e. observation and questionnaire. The data collected was analyzed by qualitative analysis using three steps, data reduction, data presentation, and conclusion formulation. Then, the analysis is completed with descriptive quantitative analysis to calculate the score of Accounting Learning Activity. Based on the research result, the implementation of Cooperative Learning Model type Jigsaw is able to improve students' Learning Activity of the grade X AK 1 SMK Negeri 1 Klaten academic year of 2015/2016. It is proven by the improvement of X AK 2's average score of Learning Activity from 71,79% on the first cycle and reaches to 81,35% on the implementation of the second cycle. This improvement shows that using Cooperative Learning Model type Jigsaw, the students' Learning Activity is increasing classically, without any domination from a few of students of the class.

Keywords: cooperative learning, Jigsaw, activity, learning activity

### Abstrak

*Penelitian ini merupakan Penelitian Tindakan Kelas yang bertujuan untuk meningkatkan Aktivitas Belajar siswa kelas X AK 1 SMK Negeri 1 Klaten tahun pelajaran 2014/2015. Penelitian ini dilakukan dalam dua siklus dengan menggunakan dua metode pengumpulan data yaitu observasi dan angket dimana data yang terkumpul kemudian dianalisis dengan analisis data kualitatif melalui tiga tahap, yaitu reduksi data, penyajian data dan penarikan kesimpulan. Analisis kualitatif tersebut kemudian dilengkapi dengan analisis statistik deskriptif untuk menghitung skor Aktivitas Belajar Akuntansi. Berdasarkan hasil penelitian disimpulkan bahwa implementasi model pembelajaran kooperatif tipe Jigsaw dapat meningkatkan Aktivitas Belajar Siswa Kelas X AK 1 SMK Negeri 1 Klaten Tahun Pelajaran 2014/2015 dibuktikan dengan adanya peningkatan skor Aktivitas Belajar kelas X AK 2 dari 71,79% pada siklus pertama dan mencapai 81,35% pada siklus kedua. Peningkatan ini menunjukkan bahwa model pembelajaran kooperatif tipe Jigsaw mampu meningkatkan Aktivitas Belajar siswa kelas X AK 1 SMK Negeri 1 Klaten secara klasikal tanpa dominasi dari beberapa siswa saja.*

*Kata kunci: pembelajaran kooperatif, Jigsaw, aktivitas, aktivitas belajar.*

## **INTRODUCTION**

The learning process will be effective and enjoyable when teachers understand the variety of teaching strategies and its various characteristics, so they can choose appropriate teaching strategies in accordance with the objectives and competencies expected.

In the learning process, often found that learning is centered on the teacher. Students only as a listener so that students become lazy to participate in the learning process. Students did not encouraged to develop their own knowledge in the learning process, so that students just rely on their friends who are good because learning is not focused on the process, but on the results.

Based on the observations in May 2014 in Grade X AK 1 SMK Negeri 1 Klaten, it can be seen that at least only 9 students of the total of 36 students (25%) who were active in his desire to participate in the accounting subjects, such as asking questions, answering questions orally given by teachers, do the problems in front of the class and discuss with other students. This happens because the learning process still less attractive. Thus, it is necessary to conduct a research about the effectiveness of cooperative learning jigsaw to increased students' accounting learning activity of Grade X AK 1 SMK Negeri 1 Klaten to resolve the issue. This is done because in Grade X AK 1

SMK Negeri 1 Klaten similar research have not been done. Accounting learning at SMK Negeri 1 Klaten have never used a wide variety of learning models, one of the strategy is Jigsaw. This model is expected to become one of the alternatives in Accounting learning in order to maximize the learning process.

Cooperative learning is an instructional method in which students are grouped into several groups. Some students then move to another group and some remained in their group. Students who move to another group will receive the material and students who remained in the group will deliver material. In this method, each student has the responsibility to accept and teach the subject matter to another friend. This method is expected to increase the activity for a large group of students, because they should learn and be able to explain the material that has been studied in a large group to a group of friends in their initial group.

## **RESEARCH METHOD**

### **Research Type**

Classroom action research has special characteristics that a research conducted by the teacher in Class itself with the assistance of researcher by designing, implementing, and reflecting the collaborative and participatory

action with the aim to improve the performance of teachers, so that student's learning problems can be resolved and student's achievement becomes optimal. This study takes the form of collaborative and participatory, means that researchers collaborate or cooperate with subject teachers in Accounting, joined in a team to conduct research with the aim to improve the deficiencies in the learning process. Participatory means researchers assisted by colleagues directly in research.

According to Pardjono (2007; 41), "Researcher is the primary observer and teacher is the actor who runs the learning scenario". Teachers only play a role of developing the designed learning action.

While the impact and classroom situations before, during, and after the action is the responsibility of researcher. This research uses the design of Kemmis & Taggart action models which modified into two rounds because there are two cycles. The procedures of this research model are: planning, action, observation, and reflection (Wiriadmadja, Rochiati 2005; 66).

The chart of the spiral model Kemmis and Taggart can be described as follows:

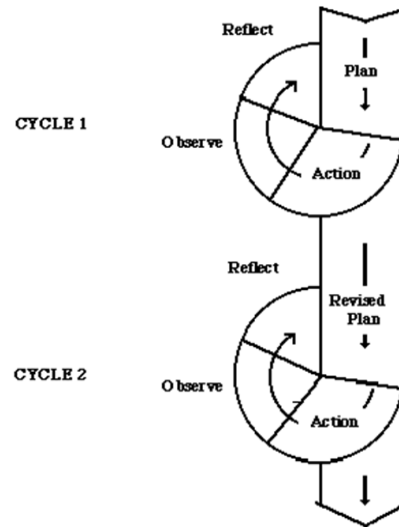


Figure 2. Spiral Model Cycle Kemmis and Mc Taggart (Arikunto, Suharsimi 2010: 132).

### Research Subject and Object

The subject of this research were 36 students of Grade X AK 1 SMA Negeri 1 Klaten. Determination of the subject done by purposive sampling, ie the research subjects determined by selecting a class based on certain considerations. In Grade X AK 1 SMA Negeri 1 Klaten has a low learning outcomes than class X AK 2. This is evidenced by 50% of the number of students in Grade X AK 1 which must follow the remedial program to meet the KKM compared to the Grade X AK 2 which is only 20%. The KKM score that has been determined in school is 75, while the object of this research was the process of learning by implementing the cooperative learning model type Jigsaw.

This research used a basic competence of Basic Accounting Equation in Cycle 1 and 2.

### **Operational Definition**

Finding research variables is very important in the process of research, because those research variables that would be a concern during the research and prepare the report.

#### **a. Accounting Learning Activity**

Accounting Learning Activity are activities performed by students in learning accounting that can bring better change on students because of the interaction between the individual, and the individual with the environment.

#### **b. Cooperative Learning Model Type Jigsaw**

Cooperative learning is a variation of learning method where students work in small groups to help each other in learning the material. In a cooperative classroom, students are expected to help each other and discuss about the knowledge that they know. Newly acquired knowledge and complement their shortcomings.

One of the type of Cooperative Learning Model is Jigsaw, where the students are divided into heterogeneous small groups. Cooperative Learning Model type Jigsaw consists of 2 groups: a group of

experts and original groups. In the learning process using Type Jigsaw, each student in the group get each task to be solved by setting up expert groups according to the number of questions pertaining to the student. After getting an answer from the discussion in the expert group, they returned to the original group and discuss the results obtained from the expert group discussions.

### **Data Collection Techniques**

#### **a. Observation**

The observation technique aims to collect the data related to students' learning activity and learning outcomes that occurs during the implementation of cooperative learning model type Jigsaw. In observing, the researcher observes Students' Learning Activity assisted by another 3 observers, while the teacher is teaching as usual. This observation is a participant observation where the researcher participated in the observed activities. Participant observation of this type is a systematic observation where the researcher uses guidelines as an instrument of observation. (Suharsimi Arikunto, 2010: 200).

#### **b. Questionnaire**

Questionnaire is the data collection technique done by giving a set of questions or written statement to the respondent to be

answered. Questionnaire will be the most efficient data collection techniques if researcher knows the variables that will be measured and know what could be expected from the respondent certainly. Questionnaire is a technique of collecting data through the forms containing written questions by a person or a group of people to get an answer or response and information required by researchers (Mardalis, 2008: 66).

c. Documentation

Documentation is done by searching the data like notes or other written documents. In this research, documents that will be used is the field notes to take a note about the events during the learning process and noted the various behaviors of students in relation to the activities that reflect the Students' Learning Activity.

**Research Instruments**

a. Observation Sheets

This research used the observation sheets to monitors the events occur during the teaching-learning process.

In the rating scale observation, observed aspects are translated into the form of scales or specific criterion (Sanjaya, Wina. 2009: 95). Observation sheets in this study using a numerical rating scale on

alternative forms of assessment determined by the numbers according to the category.

Table 1. Alternative Assessment in The Observation Sheet

Criteria	Scores
Very Good	4
Good	3
Bad	2
Very Bad	1

b. Questionnaire

Research instrument in the form of questionnaire is a tool used in this research during the data collection process and used to increase the students' accounting learning activity with the implementation of cooperative learning model type Jigsaw.

Researchers used the questionnaire in the form of closed questionnaire which has been equipped with alternative answers that may be chosen by the respondent. The questionnaire will be modified with four alternative answers, so the respondents were only give a check list (√) in a column of answers that have been provided. The measurement of these variables by using the alternative answers provided, namely:

Table 2. Alternative Answers of the Questionnaire

Positive question	Negative question	Score
Strongly agree	Disagree	4
Agree	Less agree	3
Less agree	Agree	2

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Disagree	Strongly agree	1
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### **Data Analysis Technique**

The data analysis techniques in this research done by researchers reflect on the observation of the learning done by teachers and students in a class. Data in the form of words or sentences from field notes processed into meaningful sentences and analyzed by the analysis of Miles and Haberman (Sugiyono, 2007; 338) which performed in 3 sequential components: data reduction, data presentation and conclusion formulation.

#### **a. Data Reduction**

Data reduction includes the completion of a summary or description of data through systematic information from the data reduction, ranging from planning, action, observation and reflection on each cycle.

#### **b. Data Presentation**

Data presentation is done in order to organize the data in the form of information systematically from the results of data reduction ranging from planning, action, observation and reflection on each cycle.

#### **c. Conclusion Formulation**

Conclusion is the attempt to search the meaning of the data, noting the order

and classification of data. The collected data are presented systematically and the role given a meaning.

### **Successful Action Criteria**

A Criteria used as a benchmark for determining the success of an activity or program. A program is successful if it reaches predetermined criteria and failed if it is not able to exceed the predetermined criteria. In this study, the indicator is achieved can be seen from search points listed in learning activities. In SMK Negeri 1 Klaten mastery learning value is 70% absorption of the students towards the subject matter, so in this study the minimum completeness criteria (KKM) is 75 to at least 80% of the whole class X AK 1. Determination of the successful action criteria is 80% of total 36 students, because this research is only done in two cycles and the limited time given by the subject teachers. If the result of the action is in accordance with the standards specified, so the action can be said successful.

## **FINDINGS AND DISCUSSION**

### **Description of the Research**

SMK Negeri 1 Klaten located in Jalan Dr. Wahidin Sudiro Husodo No. 22 Klaten and was established in August 1961. SMK Negeri 1 Klaten has been developed in accordance with the development of science and

technology, particularly in achieving the quality of education. As a school with National School Standards (SSN), SMK Negeri 1 Klaten has implemented a Quality Management System ISO 9001: 2000 since February 2006 by gaining the recognition and certification of ISO 9001: 2000 and in May 2007 from PT. TUV Germany. Since July 2009, SMK Negeri 1 Klaten has implemented a Quality Management System ISO 9001: 2008.

In the academic year of 2008/2009, SMK Negeri 1 Klaten determined as a leading pioneer school SMK SBI plus INVEST (Indonesia Vocational Education Strengthening). This means that since the academic year of 2008/2009 SMK Negeri 1 Klaten has been developed as school that is strong, great, qualified, and have an international standards (SBI SMK-INVEST).

**Discussion**

Based on data from the initial observation, it is known that the score of students' accounting learning outcomes has been good. This is indicated by the score of 36 students have met the minimum completeness criteria, namely 75. The score of these students are presented in Table 4 below:

Table 4. Frequency Distribution of The Students' Score at Initial Conditions

No.	Interval of Students' Score at Initial Conditions	Frequency	Percentage (%)
1	75-77	10	27,78%
2	78-80	0	0,00%
3	81-83	20	55,56%
4	84-86	0	0,00%
5	87-89	0	0,00%
6	90-92	6	16,67%
Total		36	100,0%

Source: data processed 2015

Based on Table 4 above, it is known that the score of the students on the initial conditions are good. This is indicated by the lowest score of the student is 75. This value is the minimum score of completeness for accounting lessons.

Based on the results of preliminary observations, also known that the activity of students in the learning process is still low. This is evidenced by students who did not pay attention to the teacher's explanation carefully. Students also did other activities during the learning process. This is because the teaching methods used are still centered on the teacher, so that students tend to be passive and simply accept the explanation of the teacher.

Here is the frequency of percentage of student's learning activities on the initial conditions:

Table 5. Percentage of Students' Learning Activities at Initial Conditions

No.	Aspects of Student's Learning Activities	%
1	Paying attention to the teacher's explanation	53,47
2	Taking notes of the learning material	54,17
3	Having empathy to their team members who find difficulties in understanding the material.	41,67
4	Asking a question about material that has not been understood	33,33
5	Answer a question either from the teacher or another friends in the discussion	45,14
6	Give his opinion in the discussion	45,14
7	Respond when friends argue	49,31
8	Presenting the results of the expert group	50,69

	discussions in the original group	
9	Participate in groups task	47,22
10	Do the activities according the rules	52,08
	Average	47,22

Source: data processed 2015

Based on Table 5 above, it is known that the highest average of the student learning activities is in the aspect of taking notes of the learning material that is equal to 54,71%. While the lowest average of students' activity is in the aspect of asking a question about the material that has not been understood, amounting to 33.33%.

Based on the initial conditions, needs an effort to improve student's learning activities in the learning process. One model of learning that can improve student's learning activities is Learning Model Type Jigsaw. Jigsaw is a model of learning in which students are grouped into several groups. Students then move from each group to study a material which will then be present to a friend in their origin groups in order to master the material obtained from another group. This learning model teaches every student to take responsibility for what they have received and then teach the subject matter to another friend.



Cooperative learning model type Jigsaw requires students to be more active during the learning process. This is because the learning model type Jigsaw is done by dividing the students into small groups or groups of Origin. Small groups were then subdivided into groups of experts. Every student in this expert group responsible for studying and discussing the material given to him that will be taught to their friend in their origin groups. Students can ask a friend or teacher if there are things that have not been understood. Thus the Jigsaw learning model is expected to increase the activity of learning because students must learn in a group of experts and should be able to explain the material that has been studied in a group of experts to friends in their origin group.

Table 8. The improvement of Learning Activity percentage in Cycle I and II Based on Observation Guidelines.

Aspects of Students' Learning Activity	Cycle 1 (%)	Cycle 2 (%)	Improvement (%)
Paying attention to the teacher's explanation	70,83	86,81	15,98
Taking notes of the learning material	77,78	81,94	4,16
Having empathy to their team members who find difficulties in	66,67	77,08	10,41

understanding the material.

Aspects of Students' Learning Activity	Cycle 1 (%)	Cycle 2 (%)	Improvement (%)
Asking a question about material that has not been understood	68,06	78,47	10,41
Answer a question either from the teacher or another friends in the discussion	72,92	76,39	3,47
Give his opinion in the discussion	70,83	77,78	6,95
Respond when friends argue	70,14	78,46	8,32
Presenting the results of the expert group discussions in the original group	74,31	79,86	5,55
Participate in groups task	66,67	79,86	13,19
Do the activities according the rules	64,58	79,71	15,13
Average	70,28	79,72	9,44

Source: Primary Data Processed

Based on the above table, the classroom action research was successful in increasing each indicator of students' learning activities in class X AK 1 SMK Negeri 1 Klaten from cycle I to cycle II. The score the highest learning activities exists on the 1st indicator i.e. Paying attention to the teacher's explanation that showed an increase of 15,98%.

Improvement of learning activities score at each accounting students learning activities indicator can also be illustrated by the following graph:

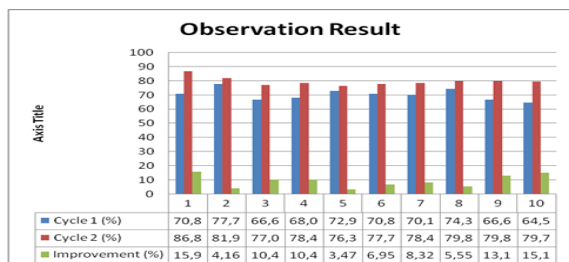


Figure 3. Chart of Learning Activity percentage improvement Ni Cycle I and II Based on Observation Guidelines.

Notes:

1. Paying attention to the teacher's explanation
2. Taking notes of the learning material
3. Having empathy to their team members who find difficulties in understanding the material.
4. Asking a question about material that has not been understood
5. Answer a question either from the teacher or another friends in the discussion
6. Give his opinion in the discussion
7. Respond when friends argue
8. Presenting the results of the expert group discussions in the original group
9. Participate in groups task
10. Do the activities according the rules

From the bar graph above it can be seen that the average scores of accounting students' learning activities based on the observation result was increased by 9,44% or at the percentage of 70,28% on cycle I to 79,72% on the cycle II.

At the end of each cycle also distributed a questionnaire sheet of accounting learning activities. Questionnaires were distributed to the students after learning completed in each cycle. Previously has been written a questionnaire result data on each indicator. Furthermore, the data is further processed to obtain the easier figures to interpret by giving a score according to the alternative answers score that have been determined.

Table 9. The improvement of Learning Activity percentage in Cycle I and II Based on Questionnaire Result

Aspects of Students' Learning Activity	Cycle 1 (%)	Cycle 2 (%)	Improvement (%)
Paying attention to the teacher's explanation	70,2	85,9	15,7
Taking notes of the learning material	75,9	79,8	3,88
Aspects of Students' Learning Activity	Cycle 1 (%)	Cycle 2 (%)	Improvement (%)
Having empathy to their team members who	70,3	78,9	8,6

find difficulties in understanding the material.			
Asking a question about material that has not been understood	67,9 8	80,0 2	12,04
Answer a question either from the teacher or another friends in the discussion	73,4 2	82,8 6	9,44
Give his opinion in the discussion	69,9 8	80,3 3	10,35
Respond when friends argue	72,2 2	81,1 2	8,9
Presenting the results of the expert group discussions in the original group	76,1 8	82,3 2	6,14
Participate in groups task	68,9 8	81,1 8	12,2
Do the activities according the rules	72,5 6	80,9 8	8,42
Average	71,7 9	81,3 5	9,56

Source: Primary Data Processed

Based on the table above, note that each accounting learning activities indicator have achieved improvement. And judging from the cycle I and cycle II of the highest Indicators in succession is an indicator of Taking notes of the learning material (75,98%) and Presenting the results of the expert group discussion in the original group (76,18%), both of these

indicators are indicators that have reached a minimum criteria of 75.00% in cycle I.

Improvement of learning activities score at each indicator can also be illustrated by the following graph:

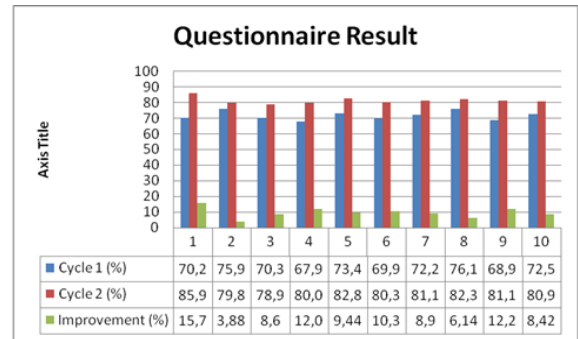


Figure 4. Chart of Learning Activity percentage improvement in Cycle I and II Based on Questionnaire Result

Notes:

1. Paying attention to the teacher's explanation
2. Taking notes of the learning material
3. Having empathy to their team members who find difficulties in understanding the material.
4. Asking a question about material that has not been understood
5. Answer a question either from the teacher or another friends in the discussion
6. Give his opinion in the discussion
7. Respond when friends argue

8. Presenting the results of the expert group discussions in the original group
9. Participate in groups task
10. Do the activities according the rules.

From the bar graph above it can be seen that the average scores of accounting students' learning activities by using questionnaires also increased by 9,56% from 71,79% in the first cycle to 81,35% in the second cycle. From all the data that has been shown, both from observation data and questionnaires, we proceed to the next stage, the stage of conclusion formulation.

## **CONCLUSIONS AND SUGGESTIONS**

### **Conclusions**

Based on the results of research that has been performed, it can be concluded that the implementation of cooperative learning model type Jigsaw able to increase the students' accounting learning activity of grade X AK 1 at SMK Negeri 1 Klaten academic year of 2014 / 2015. It can be seen from the observation and questionnaire data which showed an increase in the students' accounting learning of grade X AK 1 at SMK Negeri 1 Klaten academic year of 2014 / 2015 from cycle I to cycle II. Observational data processed showed a significant increase in the students' accounting

learning activity by 9,44% or at the percentage of 70,28% in cycle I to 79,72% in cycle II. In addition, the results of questionnaire data processing also showed an increase in the average score of the students' accounting learning activity as much as 9,56% from 71,79% in the cycle I to 81,35% in cycle II.

### **Suggestions**

Based on the research discussion and conclusion, the researchers gave the following suggestions:

#### **a. For The Teacher**

- 1) Teachers should not teach monotonously. The teachers are expected to make innovations in the teaching and learning method to improve students' motivation and learning activities.
- 2) Teachers need to optimize the learning methods that are used to achieve the goals.
- 3) Teachers need to monitor the behavior of students during the learning process. It can help the teachers to understand any problems that occur in the class and help them to evaluate the learning process happened.

#### **b. For The Researcher**

- 1) The researcher needs to be more careful to plan learning scenario.

- 2) The researcher could describe the students' learning motivation and learning activities individually into low, medium, and high categories.
- 3) The researcher needs to be more careful to observing students for more detail analysis.

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