

**PENINGKATAN COLLABORATION SKILL DAN PRESTASI BELAJAR
AKUNTANSI DASAR DENGAN MODEL PEMBELAJARAN JIGSAW DAN GAME
EDUKASI**

**IMPROVING COLLABORATION SKILLS AND BASIC ACCOUNTING
LEARNING ACHIEVEMENT WITH JIGSAW LEARNING MODELS AND
ANDROID EDUCATIONAL GAMES**

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Abstrak

Penelitian ini bertujuan untuk meningkatkan *Collaboration Skill* dan prestasi belajar Kompetensi Dasar Jurnal Penyesuaian Kelas X AKL 1 SMK N 1 Bawang Tahun Ajaran 2020/2021 melalui penerapan Model Pembelajaran Kooperatif Tipe *Jigsaw* dan Media Pembelajaran Game Edukatif Berbasis Android. Penelitian ini merupakan Penelitian Tindakan Kelas (PTK) yang dilaksanakan dalam dua siklus. Subjek penelitian ini adalah siswa Kelas X AKL Tahun Ajaran 2020/2021 Sebanyak 36 siswa. Teknik analisis data yang digunakan dalam penelitian ini adalah dekriptif kuantitatif. Hasil penelitian ini menunjukkan bahwa : 1) rata-rata skor *Collaboration Skill* Kompetensi Dasar Jurnal Penyesuaian pada siklus I sebesar 67,15% dan pada siklus II mencapai 90,48% atau terjadi peningkatan sebesar 23,33%. 2) Sedangkan skor rata-rata Hasil Belajar Kompetensi Dasar Jurnal Penyesuaian, nilai *Pre Test* siklus I sebesar 54,91 sedangkan *Post Test* sebesar 79,74 atau mengalami peningkatan sebesar 24,82. Pada siklus II, rata-rata *Pre Test* sebesar 62,51 dan rata-rata *Post Test* sebesar 93,65 atau mengalami peningkatan sebesar 31,14, dengan demikian peningkatan nilai rata-rata kelas apabila dilihat dari hasil *Post Test* siklus I ke siklus II adalah sebesar 7,88. Apabila dilihat dari kriteria ketuntasan minimal pada siklus I hasil *Post Test* menunjukkan siswa yang tuntas sebesar 57,14% sedangkan pada hasil *Post Test* siklus II meningkat menjadi 100%. Hal ini berarti ketuntasan siswa mengalami peningkatan sebesar 42,86%. Penelitian ini membuktikan bahwa Implementasi Model pembelajaran *Jigsaw* dengan Media Pembelajaran Game Edukasi berbasis Android dapat meningkatkan *Collaboration skill* dan Hasil Belajar siswa Pada Kompetensi Akuntansi Dasar

Kata kunci: Tipe *Jigsaw*, *Collaboration Skill*, Game Edukasi, Prestasi Belajar

Abstract

This research aims to improve Collaboration Skills and learning achievement of Basic Competencies for Class X AKL 1 SMK N 1 Bawang Adjustment Journal 2020 / 2021 Academic Year through the application of the Jigsaw Type Cooperative Learning Model and Android-Based Educational Game Learning Media. This research is a Classroom Action Research (CAR) which was conducted in two cycles. The subjects of this study were 36 students of Class X AKL Academic Year 2020/2021. The data analysis technique used in this study is quantitative descriptive. The results of this study is: 1) The average score of Collaboration Skills Basic Competencies of Adjustment Journal in cycle I is 67.15% and cycle II reaches 90.48% or an increase of 23.33%. 2) While the average score of Learning Achievement for Basic Competencies of Adjusted Journals, the value of the Pre Test cycle I

was 54.91 while the Post Test was 79.74 or an increase of 24.82. In cycle II, the average pre-test was 62.51 and the post-test average was 93.65 or an increase of 31.14, thus increasing the class average value when viewed from the results of the post-test cycle I to cycle II. amounted to 7.88. When viewed from the minimum completeness criteria in cycle I, the results of the Post Test show that students who have completed are 57.14% while the results of the Post Test cycle II have increased to 100%. This means that student completeness has increased by 42.86%. Generically, this study proves that the implementation of the Jigsaw learning model with Android-based educational game learning media can improve collaboration skills and student learning achievement in basic accounting competencies.

Keywords: *Jigsaw Type, Collaboration Skill, Educational Game, Learning Achievement*

INTRODUCTION

The covid-19 pandemic which at the world has been more than one year impact on changes in teaching learning activities. Online learning become an option of the ministry of education and culture to prevent the extensive spread of the covixd-19 virus. Changes very fast without additional preparation according to their previousness, there are a lot of statements in dealing with it. Online learning that has not been properly prepared will certainly have an impact on the learning methods carried out by educators. Likewise, the acceptance of learning from students is also very diverse, often they do not understand the material or delivery from the teacher (Kompas, 2020). Educational practices in the digital era require continuous innovation and creation so that teachers and students do not easily experience boredom. Also, do not interpret online learning as simply giving students a few questions to answer. If this happens, the liberating and characterful learning will stop

at the slogan without ever knowing the spirit in it.

One type of Cooperative Learning Model is Jigsaw. Isjoni (2010: 77) states that the Jigsaw Cooperative Learning Model is a strategy that can encourage active students and achieve maximum achievement. Students discuss small groups that each small group member makes a summary to understand the material being studied. Then a new group was formed, and each member explained a summary to fellow members so that a complete understanding was obtained. In the Jigsaw type, the material group is called the expert group, and the second group is called the origin group.

Research conducted by leading education organization Cambridge International - part of the University of Cambridge in the UK - found Indonesian students use technology in the classroom more than many other countries, often outperforming more developed countries. More than two thirds of Indonesian students

(67%) use smartphones in class, and even more use them to do homework (81%) (BBC, 2018). For the material presented by the teacher to be well received by students, the help of a medium is needed. Djamarah and Zain (2013: 120) argue that the media is a vehicle for channelling learning information or distributing messages. The role of teaching media is an intermediary to facilitate the teaching-learning process to achieve teaching goals effectively and efficiently (Zainal and Setiyawan, 2012: 125). These learning media can make students learn independently outside of limited school hours.

There are various learning media, especially the development of mobile devices at this time is very fast. Anyone with an Android device can easily access anything, anytime and anywhere, including learning materials and evaluation questions. Learning materials and evaluation questions can be accessed through applications or search engines on the Internet. One application that provides accounting adjustment journal questions for service companies is ASAH AKUNTANSI. The accounting subjects studied at the high school level are the accounting cycle of service companies. The ASAH AKUNTANSI application contains questions and discussion of service company accounting adjusting journals. The

content of this application is the same as games in general, consisting of several questions that must be answered with a predetermined time duration.

It is undeniable that the world is inseparable from change and currently we are in the era of the Industrial Revolution 4.0 and 5.0 which is marked by internet-based, digitalization in many aspects of life, interconnectedness, and artificial intelligence. This fact is also an alarm for the government and educational institutions to innovate in order to respond to changing times that can occur at any time and to produce human resources who are ready to compete at both national and global levels. The Minister of Education and Culture and Research and Technology of the Republic of Indonesia, Nadiem Makarim said that some of the main competencies that must be possessed by students are 4C, and computer logic. One of the abilities that students must have is Collaboration (BBC Therefore, it is time for us to leave the educational culture that suppresses students' independence and create schools as safe spaces for students to develop their potential, creativity, and uniqueness.

Based on the researcher's observations at SMK N 1 Bawang in February 2021 in class X AKL, teachers still use simple methods such as the lecture method in learning activities. Learning

Activities of Adjustment Journal Basic Competencies in this class are still relatively low. The low activity of Learning the Basic Competencies of the Adjustment Journal can be seen when learning takes place. Students are less active in question and answer. Only a few students actively asked and answered when the teacher gave material online.

Teachers at SMK N 1 Bawang have used several learning media such as power points and other media. The use of various learning media is a form of innovation in education to reduce the spread of the Covid-19 virus. Based on interviews conducted with the Accounting Teacher at SMK N 1 Bawang, currently, Android cellphones are one of the most needed media in the learning process. It becomes an opportunity for teachers to attract students' attention when using objects that attract students, namely mobile phones. In addition, teachers tend to apply Learning Models that quickly make students bored and care less about their peers. It should be in an era like today, and it takes young people who can work together with a team. Based on this, the teacher can apply the Student Learning Model so that students are not bored, learning is more fun, and can foster student Collaboration Skills.

The Jigsaw learning model is a learning model designed to increase

students' sense of responsibility towards their learners and also the learning of others. Students learn the material given, but they also have to teach the material to the group to learn social skills.

Asah Akuntansi is an educational game in the form of questions that students must answer. It will be more interesting for students because it is packaged into a game on an Android phone. Learning media using the Android-based Accounting Teaser Educational Game was developed by Ditto Rahmawan Putra in 2016 but has not been tested at SMK N 1 Bawang. However, it has been tried before at SMA N 1 Imogiri. The Researcher will apply this Android-based educational game media to the primary accounting material for class X SMK N 1 Bawang. This study aimed to determine the learning media for Android-based educational games in learning Basic Accounting class X AKL SMK N 1 Bawang to improve Learning Achievement of class X AKL SMK N 1 Bawang class students or not.

One of the problems in the world of education in the midst of distance learning online learning (PJJ) is the weakness of the learning process. The learning process in this condition is only directed at the ability of students to memorize information, remember and hoard various information that they remember so that students are not

encouraged to develop their affective abilities, especially collaboration skills. Efforts to improve the quality of education must continue to be carried out, in learning so as to assist students in developing their potential. Teachers as important components in determining the success of the educational process should have the ability to design learning models that are in accordance with the goals to be achieved so that student learning achievement can increase and take advantage of modern technology that today's teenagers like, such as android educational games.

From the description above, it can be concluded that monotonous learning when the teacher teaches can lead to low Learning Achievement for Basic Competencies of Adjustment Journals. Because, during the learning process, students are only given material or explanations from the teacher through the lecture learning model and then given assignments even though we don't know whether the student already understands or not regarding the material presented. If this happens continuously, it is feared that it will reduce the success of the learning process. The Jigsaw Type Cooperative Learning Model is needed as an innovation of the lecture method that has been used to encourage Learning Achievement of the Basic Competencies of Adjusting Journals. Therefore, teachers need

to apply the Jigsaw Type Cooperative Learning Model. In the Jigsaw Type Cooperative Learning Model, students are divided into expert groups and home groups. In the expert group, transactions will be broken down into sub-material. Expert groups discuss the sub-material in-depth simultaneously so that they can convey in a relatively fast time. The results of the discussion to the expert group are then presented in the homegroup. In the original group, the whole sub-material is associated with one complete and complete material. These presentations encourage students to speak, write, see and listen in learning activities.

The teacher states that students prefer to ask friends if they do not understand the material being studied. With the existence of an expert group, students will become experts in certain sub-materials and can invite other friends who are experts in other sub-materials. Accounting as part of Basic Accounting lessons, especially Adjustment Journals, can be appropriately studied requires a practical evaluation tool in an Accounting Sharpening Application. According to Lie in Rusman (2014: 218), Jigsaw is a type or model of flexible, cooperative learning. Much research has been done regarding cooperative learning based on Jigsaw. This research consistently shows that students involved in the Jigsaw-

type collaborative learning model get better performance, have better and more positive attitudes towards learning, and respect the differences and opinions of others.

This research is expected to increase teacher creativity in teaching, increase teaching variation and liven up the classroom atmosphere. It is anticipated that grade X AKL SMK N 1 Bawang Academic Year 2020/2021 will increase their activeness, Collaboration Skills, and understanding. The Learning Achievement of essential accounting competencies can be improved by applying the Jigsaw Learning Model with Android-based educational game learning media.

METHODS

Research Type and Design

The method used in this research is classroom action research. Classroom Action Research (CAR) focuses on the class or the teaching and learning process in the classroom, not on class input or output. This research is carried out collaboratively and participative, meaning that the research is conducted by Researcher and accounting teacher SMK N 1 Bawang. Suharsimi (2016: 2) explains CAR through exposure to a combination of definitions three words: (1) Research refers to observing an object using specific methodological rules and methods to obtain data or information helpful in

improving the quality of interest and importance to the Researcher. (2) Action refers to an activist movement that is deliberately carried out with a specific purpose. In this case, the movement of activities is a cycle that repeatedly occurs for students subjected to action.

Arikunto (2016: 58) states that Classroom Action Research is action research conducted to improve classroom quality of learning practices. There are four essential stages in Classroom Action Research: planning, implementing actions, observing, and reflecting.

Research Subject and Object

The subjects of this study were 36 students of Class X AKL SMK N 1 Bawang for the academic year 2020/2021. The object of this research was the Learning Achievement of Accounting and Collaboration Skills with the Implementation of the Jigsaw Learning Model with Android-Based Educational Game Learning Media.

The Definition of Variable Operational

1. Collaboration Skills

Collaboration is a form of relationship between several interacting parties to achieve common goals. The objectives to be completed in this case were Basic Competencies of Adjusting Journals.

Collaboration Skills of Basic Competencies for Adjustment Journals were assessed using a questionnaire. The indicators used in the questionnaire included (a) giving and receiving feedback from each group member, (b) sharing tasks, (c) acknowledging skills, (d) gaining experience, creativity, and the contribution of others, (e) listening to worries, opinions, and other people's ideas, (f) listening to others in conflict situations, and (g) supporting group decisions. The number of scores obtained by each student on the questionnaire results was calculated as a percentage average.

2. Learning Achievement

Accounting Learning Achievement can be changed by students' behaviour due to the learning and teaching process, which can be observed and measured using their knowledge, attitudes, and accounting learning skills. This study discussed Accounting Learning Achievement in Class X AKL SMK N 1 Bawang Academic Year 2020/2021 in basic accounting subjects, especially the adjusting journals essential competencies. The accounting assessment technique used was a written test in descriptive questions on the Pre-test and Post-test.

3. Jigsaw Learning Model

The Jigsaw learning model is a learning model designed to increase students' sense of responsibility towards their learning and

also the learning of others. Students learn the material given, but they must also be ready to teach the material to their groups so that students' social skills are needed. In the Jigsaw Type Cooperative Learning Model, students are divided into expert groups and home groups. In the expert group, transactions will be broken down into sub-material. Expert groups discuss the sub-material in-depth simultaneously so that the entire content of the material can be conveyed in a relatively fast time. The results of the discussion to the expert group are then presented in the homegroup. In the original group, the whole sub-material is associated with one complete and complete material. These presentations encourage students to speak, write, see and listen in learning activities.

4. Educational Game Based on Android "Asah Akuntansi"

The educational game "Asah Akuntansi" was a game where students would be presented with a challenge to hone their understanding of adjusting journals. They had to go through the existing levels by choosing to play by each group or the whole class. This level would be adjusted to the indicators of Basic Competence in the adjusting journal. To answer questions containing material related to adjusting journals, students would be given time to answer these questions and have the opportunities of three times to go through

them. Then, this educational game also contained fun pictures along with discussions or explanations.

5. Learning Adjustment Journal Accounting Competence

Adjustment Journal is an accounting record of obtaining and presenting financial statements that determine and recognize assets, liabilities, income, and expenses appropriately and correct errors that occur to show the actual situation at the end of the accounting period.

Data Collection Technique and Research Instruments

1. Documentation

Documentation was used to support and reinforce data obtained during research activities. The documentation used in this study is a learning outcome document, lesson plans, student attendance list, and documentation in the form of photos during the learning process.

2. Test

Learning Achievement Test was measured based on the Minimum Mastery Criteria that students had to achieve. The researcher used the Pre-test and Post-test to measure the improvement of student learning outcomes. The Pre-test is carried out every time you start presenting new material. The goal is to identify the level of knowledge of students about the material to be delivered. A post-test is an evaluation

activity carried out by the teacher at the end of each presentation of material (Muhibbin, 2015: 201). The purpose of the Post-test is to determine the level of student mastery of the material that has been taught. The researcher compared the Pre-test and Post-test results in each cycle and students' learning completeness.

3. Field Notes

Notes were used to record things that happen during learning activities. Mainly, field notes were used to write down events related to data regarding several aspects of the learning process in the classroom, including the classroom atmosphere, classroom management, teacher-student interactions, and student-student interactions.

4. Questionnaire

According to Sugiyono (2016: 199), the questionnaire is a data collection done by giving a set of questions or written statements to answer. The researcher used a structured questionnaire with a closed answer form, namely a questionnaire where each answer was already available with various alternative answers (Zainal Arifin, 2013: 167). This questionnaire was used to determine the level of students' Collaboration Skills.

The research instrument in the form of a questionnaire is a tool used in research when collecting data in the field, used as information to determine the increase in

Collaboration Skill Basic Competencies of Adjusted Journals. The questionnaire used by the researcher was closed; namely, a questionnaire that had been equipped with alternative answers that the respondent could select. The use of a questionnaire in this study was to describe each research variable into indicators to be measured. The indicators were translated into statement items. The questionnaire is compiled based on the Collaboration Skill indicator, which is a feature that reflects the Collaboration Skill according to Zubaidah (2018). The following is the Collaboration Skill grid used in this study.

Table 1 Questionnaire Grid *Collaboration Skill*

Variable	Indicator	Item Number	Total	Data Source
Collaboration Skill	1. Give and receive feedback from each group member	1,2,3,4,5	5	Student
	2. Share Tasks	6,7,8,9,10*	5	
	3. Recognizes the skills, experiences, creativity and contributions of others	11,12,13,14,15	5	
	4. Listen to other people's	16,17,18	3	

	concerns, opinions, and ideas			
	5. Listening to other people in conflict situations	19,20,21	3	
	6. Support group decisions	22,23,24	3	
Total			24	

*is Negative item

This Collaboration Skill Questionnaire uses a Likert scale which is modified into four answers. With the Likert scale, the variables to be measured are translated into variable indicators; then, these indicators are used as a starting point for compiling instrument items in the form of questions or statements (Sugiyono, 2015: 93). Respondents give a checkmark (√) in the column provided. The scoring criteria for each alternative answer given by the respondent are as follows:

Table 2 Likert Scale Assessment Criteria Collaboration Questionnaire Skills Basic Competencies Adjustment Journal

Alternative Answers in the column	Alternative Score	
	Positive Statement	Negative Statement

provided		
Always	4	1
Often	3	2
Sometimes	2	3
Never	1	4

Sugiyono (2015:93)

Validation

Instrument Test

1. Validity Test

The decision-making criteria to determine whether a research instrument is valid or not is if the r count is greater than or equal to the r at the 5% significance level. It indicates that the statement item is declared valid. Conversely, if the r count is less or equal to the r , the statement is declared invalid. Invalid statement items are not used in the following research stage or are considered invalid.

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invalid. as for the validity test carried out in this study using statistical test software

2. Reability Test

The test is reliable if there is a value greater than 0.6 on Cronbach Alpha (Sugiono, 2015). Therefore the instrument is declared unreliable if it is less than 0.6. as for the validity test carried out in this study using statistical test software

3. Difficulty Level

The difficulty index is a number that shows the difficulty and ease of a problem. The magnitude of the difficulty index is between 0.00 and 1.0. A difficulty index of 0.0 indicates that a question is too tricky, while 1.0 is an index that shows a too easy question.

4. Differentiating Power

Differentiating Power is the ability of a question to differentiate between high-ability students and low-ability students.

Suharsimi Arikuto (2007: 218), the classification of the differentiating power is as follows:

Interval	Interpretation
0,00 – 0,20	Bad
0,20 – 0,40	Enough
0,40 – 0,70	Good
Negative	Not good, better be thrown away

5. Distraction

Distractors can be good if they are selected by at least 5% of the test takers and are determined more by the less intelligent students.

Questionnaire

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Data Analysis Technique

Quantitative Descriptive Data Analysis

Calculating Improved Accounting Learning Achievement

1. Calculating the Improvement of Accounting Learning Achievement in the Cognitive Domain

The increase in Learning Achievement can be determined by calculating the average value of the pre-test and post-test with the formula:

$$Me = \frac{\sum xi}{n}$$

Explanation:

Me = Average (*Mean*)

$\sum xi$ = The sum of all values

n = Total students (Sugiyono, 2015: 49)

The next step is to calculate learning completeness with the following formula:

$$= \frac{\text{Total students scored } \geq 75}{\text{Total students participated in the research}} \times 10\%$$

2. Presentation of Data

The processed data is then presented in tables and graphs. The tables and charts are then narrated so that they are easy to understand.

3. Draw conclusions

Drawing conclusions is the final stage in data analysis. After the data was presented,

the essence of data is taken then written down in the form of a statement that has a firmer meaning on the research results.

Quantitative Data Analysis

1. Calculating the increase in student Collaboration Skills

Following Miles Huberman's qualitative analysis techniques used for qualitative research (Sugiyono, 2016: 338), this study used the following data analysis techniques:

a) Data Reduction is a simplification process by selecting, focusing, and abstracting meaningful, raw data. The data obtained from the original research were in the form of raw data derived from notes and other documentation. b) Presentation of Data is a more straightforward data presentation in the form of a narrative, representative tabular presentation, including in the format of matrices, graphs, etc. Presentation of data is done to facilitate the delivery of information obtained from data. c) Conclusion Withdrawal

The next step in the qualitative data analysis process is to conclude to answer the problem. Qualitative data analysis is based on questionnaire data from Collaboration Skills Basic Competencies of Adjustment Journal obtained by giving a score on each practical component aspect.

2. Calculating the Collaboration Skill Competency Questionnaire Score Adjustment Journal

$$\text{Level of Coll Skill} = \frac{\text{questionnaire score}}{\text{Maximum score}} \times 100\%$$

(Sugiyono, 2016: 134)

RESULT AND DISCUSSION

RESULTS

The Report of Cycle I

1. Observations on Collaboration Skill Basic competencies Adjusting journals.

Observation activities for Collaboration Skill Basic competencies Adjusted journals were carried out using a questionnaire. The results of the observation of Collaboration Skill Basic competencies for the Adjustment Journal were as follows:

Table 3 Results of the Cycle I Collaboration Skill Questionnaire

No	Indicator	Percentage
1	Give and receive feedback from each group member	65,97%
2	Share Tasks	70,14%
3	Recognizes the skills, experiences, creativity, and contributions of others	70,28%

4	Listen to other people's concerns, opinions, and ideas	66,89%
5	Listening to other people in conflict situations	57,18%
6	Support group decisions	72,45%
Average		67,15%

Based on data from the Collaboration Skill Basic Competency Questionnaire for the Adjustment Journal shown above, it could be seen that the students' Adjustment Journal Basic Competency Skill scores had not met the minimum criteria. The Collaboration Skill Score for the Adjustment Journal Basic Competency based on a questionnaire in cycle I is 67.15%. Still, due to the minimum standards of 75%, the score had not been met and would be continued in cycle II.

2. Observations on Learning Achievement of Basic Competencies of Adjustment Journals

Observations of the Learning Achievement of the Basic Competency of the Adjustment Journal before and after implementing the Jigsaw Type I Cycle Cooperative Learning Model were measured by providing a Pre-test and Post-test. The Pre-test results were then

compared with the Post-test results. This measurement was carried out to determine how students understood the Adjustment Journal Basic Competencies using the Jigsaw Type Cooperative Learning Model. The Post-test question aimed to measure the distance to which students' Accounting Learning Achievement could improve. The minimum mastery criteria (KKM) in this material is 75. Accounting Learning Achievement could be seen in the following.

Table 4 Learning Achievement of Basic Competencies of Cycle I Adjustment Journal

Value Category	<i>Pre-test</i>		<i>Post-test</i>	
	Frequency	%	Frequency	%
$N \geq 75$	0	0	20	57,14
$N \leq 75$	35	100	15	42,85
Total	36	100	36	100

Based on the data above, it could be concluded that the average score of students in the first cycle increased from the Pre-test score of 54.91 to 79.74 in the Post-test or an increase of 24.83. If depicted in the form of a diagram, the value of the Competency Learning Achievement of the Adjustment Journal for the cycle I could be seen in Figure 3

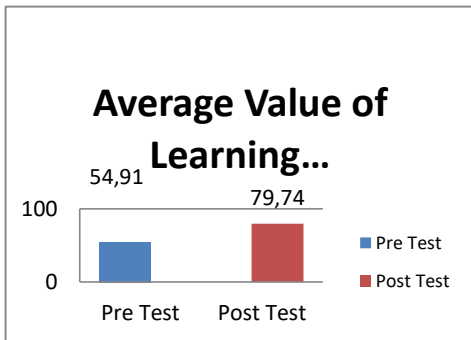


Figure 1 The Average Value of Learning Achievement in Cycle I

Students' learning mastery on the Pre-test and Post-test can be calculated as follows.

Calculating the percentage of student learning mastery with the formula:

$$\frac{\text{Total students scored } \geq 75}{\text{Total students participated in the research}} \times 100\%$$

$$\text{Mastery learning Pre-test} = \frac{0}{35} \times 100\% = 0\%$$

$$\text{Mastery learning Post-test} = \frac{20}{35} \times 100\% = 57.14\%$$

The learning mastery of the Pre-test shows that no student (0%) has reached the KKM; this is due to a lack of basic knowledge and skills on the material being studied; besides, online learning made adjusting journal material more difficult for students to understand. The material for adjusting journals was quite challenging to understand, especially since this material was still new to students. In the previous

lesson, the teacher had told students to study the material for adjusting journals.

Meanwhile, the mastery learning Post-test showed an increase in the number of students who reached the KKM, namely 20 students (57.14%). The Pre-test and Post-test results showed that the number of students who had gone to the KKM was not yet 75%. If depicted in the form of a diagram, the mastery of the Accounting Learning Achievement in cycle I can be seen in Figure 2.

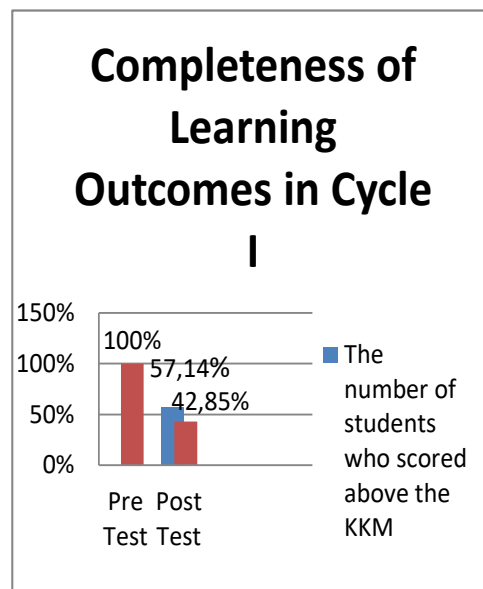


Figure 2 Mastery Learning Achievement in Cycle I

From the observations, students' affective Learning Achievement seen from the indicators of affective learning assessment in Chapter III show that the first discussion offered a class atmosphere where students were still seemed to be

reluctant and embarrassed to ask questions, were ashamed to be active in discussions, student cooperation was not well-formed in group discussions and still depended on friends as a group. When the teacher explained the material through Google Meet, students paid less attention to the teacher. Many students were not active in video and voice, and there were still students who do not focus on learning and did other activities such as chatting with friends.

The psychomotor learning results showed that the class atmosphere looked less conducive when students entered the Google Meet class. Some students attended virtual meetings late so they interfered with learning because they had to explain again. In the first cycle, many students did not record the lesson material well. Many students only took a screenshot of the PowerPoint presentation without writing down the essential points. In addition, when students made presentations, most students only read everything on the slides without paying attention to the crucial points to be conveyed. Many students were still not on time or exceeded the predetermined time limit when working on the questions. During group discussions using Asah Akuntansi, many students still asked how to use them and install them. Time management had not been implemented optimally because there was too much time

for the preparation and conditioning of students.

The Report of Cycle II

1. Observations on Student Collaboration Skills Basic Competencies of Adjusting Journals.

Observation activities for Collaboration Skill Basic competencies Adjusted journals were carried out using a questionnaire. The results of the observation of Collaboration Skill Basic competencies for the Adjustment Journal were as follows:

Table 5 Results of the Cycle II Collaboration Skill Questionnaire

No	Indicator	Presents
1	Giving and receiving feedback from each group member	87,78%
2	Sharing Tasks	91,94%
3	Recognizing the skills, experiences, creativity, and contributions of others	93,47%
4	Listening to other people's concerns, opinions, and ideas	90,28%
5	Listening to other people in conflict situations	83,33%
6	Supporting group decisions	96,06%

Average	90,48%
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Based on the data from the questionnaire results shown above, it could be seen that the Collaboration Skill score for the Adjustment Journal Basic Competency had increased, both an increase in each indicator and an average increase in the Collaboration Skill score for the Adjustment Journal Basic Competence. The average score of Collaboration Skill Basic Competencies for Adjustment Journal based on the questionnaire in cycle II is 90.48%, so that it had exceeded the minimum success criteria, namely 75%. Therefore, the action in cycle II could be said to be successful.

2. Observation of Learning Achievement of Accounting Basic Competencies of Adjustment Journal.

The Adjustment Journal Competency Study results were seen based on the Pre and Post-test cycle II impacts. The minimum mastery criteria (KKM) in this material was 75. Student's Accounting Learning Achievement can be seen in the following.

Table 6 Learning Achievement of Competency Adjustment Journal Cycle II

Category Value	Pre-test		Post-test	
	Frequency	%	Frequency	%

$N \geq 75$	2	5.55	36	100
$N \leq 75$	34	94.44	0	0
Total	36	100	36	100

Source: Processed Primary Data

Information: N = Value

Based on the data above, it can be concluded that the average score of students in the first cycle was increased from the Pre-test score of 62.51 to 93.65 in the Post-test or increased by 31.14. If it is depicted in the form of a diagram, the value of the Competency Learning Achievement of the Adjustment Journal II cycle can be seen in Figure 3.

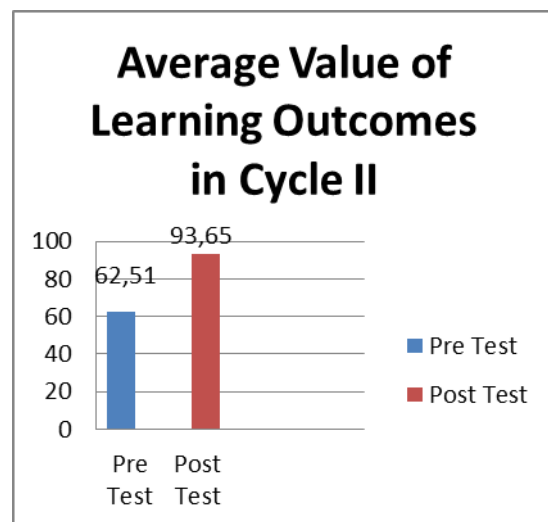


Figure 3 Average Value of Learning Achievement in Cycle II

Students' learning mastery on the Pre-test and Post-test can be calculated as follows:

Calculating the percentage of student learning mastery with the formula

$$\frac{\text{Total students scored } \geq 75}{\text{Total students participated in the research}} \times 100\%$$

$$\text{Mastery learning Pre-test} = \frac{2}{36} \times 100\% = 5.55\%$$

$$\text{Mastery learning Post-test} = \frac{36}{36} \times 100\% = 100\%$$

The mastery of learning in the Pre-test shows that two students (5.55%) have reached the KKM, while the mastery learning of the Post-test indicates an increase in the number of students who achieved the Pre-test KKM, namely 34 students (100%). If depicted in the form of a diagram, the mastery of the Accounting Learning Achievement in cycle I can be seen in Figure 4.

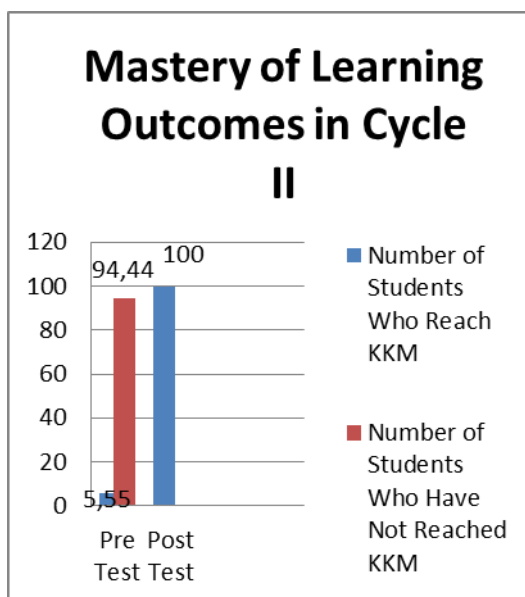


Figure 4 Mastery of Learning Achievement in Cycle II

From the observation, affective Learning Achievement were seen from the affective learning assessment indicators in Chapter III; it could be seen that in the second discussion, the attitudes of students during the learning process were excellent and active. Students seemed to be familiar with applying this learning; in this discussion, students seemed to cooperate quite well and responsibly. Students were more involved in asking questions and giving ideas and answering questions. When the teacher explained or delivered information related to learning material, students paid attention to the offered learning material.

Student psychomotor Learning Achievement showed that the class atmosphere tended to be more conducive, where students could put themselves well. In addition, students had more awareness to work on problems independently. Students also looked more enthusiastic when using the learning media for Accounting Teaching educational games. When asking questions, the students raised their hands first and then asked questions. Students were familiar and wanted to communicate with teachers and friends to learn the subjects being taught. In this second discussion, the students were given a summary of the learning materials

so that it did not take much time to record learning materials and only added a few notes. The time allocation was also better than the previous discussion.

Discussion

1. Results of the Collaboration Skill Basic Competency Questionnaire for the Adjustment Journal.

The data obtained from the questionnaire before the action and at the end of each cycle would be analyzed and produced a percentage of the Adjustment Journal Basic Competency Collaboration Skill indicator and average score. Furthermore, the percentage score of Collaboration Skill Basic Competencies of Adjustment Journal before the action was compared with cycle I and cycle II to determine the increase. The increase in the percentage of the Collaboration Skill score for the Basic Competencies of the Adjustment Journal based on the questionnaire can be seen in the following :

Table 7 Score of Collaboration Questionnaire Results in Cycle I to Cycle II

No	Indicator	Collaboration Skill Score Percentage		Improvement of Cycle I to Cycle
		Cycle I	Cycle II	
1	Giving and receiving feedback from each group member	65,97%	87,78%	21,81%
2	Sharing Tasks	70,14%	91,94%	21,80%
3	Recognizing the skills, experiences, creativity and contributions of others	70,28%	93,47%	23,19%
4	Listening to other people's concerns, opinions, and ideas	66,89%	90,28%	23,39%
5	Listening to other people in conflict situations	57,18%	83,33%	26,15%
6	Supporting group decisions	72,45%	96,06%	23,61%
Average Score		67,15%	90,48%	23,33%

				II
1	Giving and receiving feedback from each group member	65,97%	87,78%	21,81%
2	Sharing Tasks	70,14%	91,94%	21,80%
3	Recognizing the skills, experiences, creativity and contributions of others	70,28%	93,47%	23,19%
4	Listening to other people's concerns, opinions, and ideas	66,89%	90,28%	23,39%
5	Listening to other people in conflict situations	57,18%	83,33%	26,15%
6	Supporting group decisions	72,45%	96,06%	23,61%
Average Score		67,15%	90,48%	23,33%

The increase in the Collaboration Skill score for the Basic Competency of the Adjustment Journal based on the questionnaire data could be seen from the percentage increase in each indicator and an increase in the average score. The highest percentage increase was in the arrow of Listening to other people in conflict situations. This indicator had increased by 26.15%, while the lowest increase was in the hand-sharing tasks of 21.80%. Based on the average questionnaire results from cycle I to cycle II, the Collaboration Skill score for the Basic Competency of Adjusting Journal was increased by 23.33%. The increase in the Collaboration Skill score for the Basic Competency of the Adjustment Journal was based on the average score of Collaboration Skill for the Basic Competence of the Journal. The graph of the increase of the scores can be seen below:

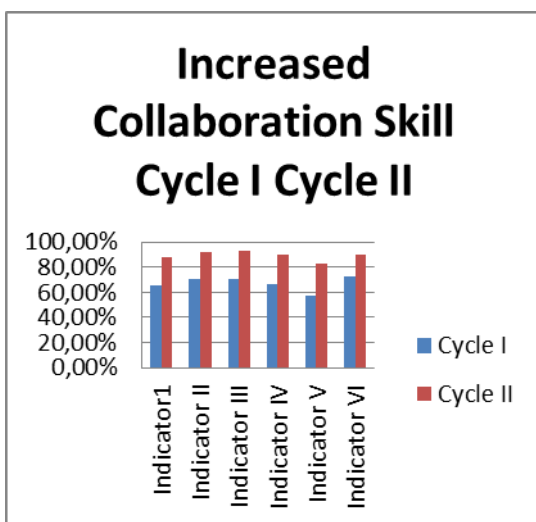


Figure 5 Increased Collaboration Skill from Cycle I to Cycle II

Based on the questionnaire that had been presented, it could be seen that there was an increase in each indicator of Collaboration Skill Basic Competence Adjustment Journal from cycle I to cycle II.

Implementing the Jigsaw learning model with the educational game learning media “Asah Akuntansi” made students more active and dared to explore their thoughts in answering questions or completing assignments from the teacher so that learning is not teacher-centered. It is expressed by Olinan and Sujatmika (2017: 14); the advantages of the Jigsaw Learning Model are that it can provide opportunities for students to collaborate with other students, and students can master the lessons presented.

Learning Media in the form of Asah Akuntansi application is a media in the form of games. Games can increase students' interest in learning materials and involve students in class discussions (Haywood, McMullin, & Wygal et al., 2004). It causes students to develop their conversations in-depth so that students can find answers to the questions given. In addition, it can have a good effect on students' Accounting Learning Achievement.

Implementing the learning process with implementing the Jigsaw learning model assisted by the educational game learning

media "Asah Akuntansi" in cycle I and cycle II showed an increase in Accounting Learning Achievement, especially in the cognitive domain. The increase in the average value of Accounting Learning Achievement in cycle I and cycle II can be seen in Figure 6 below.

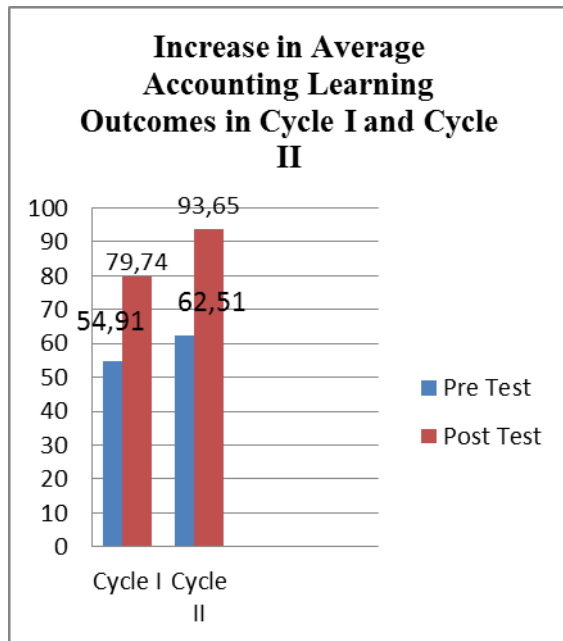


Figure 6 Increase in Average Accounting Learning Achievement in Cycle I and Cycle II

Based on the Figure above, it can be seen that there was an increase in the average Accounting Learning Achievement in cycle I and cycle II after the implementation of the Jigsaw learning model with learning media of the educational game "Asah Akuntansi". The average Accounting Learning Achievement in the Pre-test cycle I amounted to 54.91, showing an increase of 79.74 in the Post-test. In cycle II, the average value of

Accounting Learning Achievement on the Pre-test was 62.51, rising to 93.65 on the Post-test. These data proved that implementing the Jigsaw Type Learning Model with the Educational Game Learning Media "Asah Akuntansi" could improve the Learning Achievement of Accounting.

Improved Accounting Learning Achievement could also be seen from the increase in the mastery of Accounting Learning Achievement in cycle I and cycle II. The totality of Learning Achievement in cycle I and cycle II is presented in Figure 7 below.

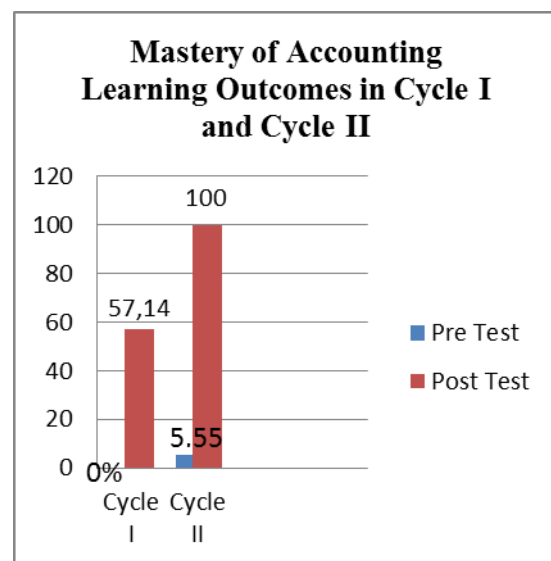


Figure 7 Mastery of Learning Achievement in Cycle I and Cycle II

Based on the figure, it can be seen that there was an increase in the mastery of the Accounting Learning Achievement after the implementation of the Jigsaw Type Learning Model with Educational Game

Learning Media "Asah Akuntansi". The fullness of the results of learning accounting in the pre-test cycle I was 0% and it was increased to 57.14% in the Post-test or an increase of 57.14%. In the second cycle, the mastery of the Accounting Learning Achievement on the Pre-test was 5.55% and it was increased to 100% in the Post-test or increased by 94.45%. If the mastery of the Accounting Learning Achievement in cycle I and cycle II were compared, the increase in Accounting Learning Achievement in cycle II was more significant than the increase in process I.

Accounting Learning Achievement had increased from cycle I to cycle II, seen from the average class value after implementation. The middle-class score (Post-test) in the first cycle was 79.74, increasing to 93.65 in the second cycle. It meant that there was an increase in Learning Achievement by 13.91 points. The percentage of learning completeness was also increased from cycle I to cycle II. The rate of learning mastery (Post-test) of 57.14% was increased to 100% in the first cycle. That indicated an increase of 42.86%.

From the observations of students' effective Learning Achievement, it could be seen that the first discussion showed that the class atmosphere looked less conducive. Students still seemed reluctant and embarrassed to be active in discussions;

student cooperation was not well-formed in group discussions. In the second discussion, the students' attitudes during the learning process were excellent and energetic. Students were already seemed familiar with applying this learning model; in conversations at this virtual meeting, students seemed to work together quite well and responsibly; students were more active in asking questions, giving ideas, and answering questions.

The third domain of Learning Achievement is psychomotor. The skills that were observed as a result of student learning in the psychomotor domain had also increased. The factors that influence, namely, students began to try to apply the concept of independent learning. Students started to become aware of their responsibility in completing assignments. Students had started to use discipline, and students had begun to collaborate and improve their verbal skills in group work.

CONCLUSION, LIMITATION, AND SUGGESTION

Conclusions

Based on the results of the research and discussion described in Chapter IV, it can be concluded that:

1. The application of the Jigsaw Type Cooperative Learning Model with

Accounting Teaching Media could increase the Collaboration Skill Basic Competency of the Adjustment Journal, this was evidenced by the mean score of the Collaboration Skill Basic Competency of the Adjustment Journal in cycle I is 67.15%, and in process, II reached 90.48 % or an increase of 23.33%.

Referring to previous research by Salsabila (2019) The results showed that implementing the Jigsaw Cooperative Learning Model could improve the Basic Banking Learning Achievement of Class X Students of Accounting and Finance at the SMK Muhammadiyah 1 Tempel Academic Year 2018/2019. The results of this study are the same as those of the study, where the jigsaw learning model is able to improve student achievement. The difference in the research lies in the conditions and atmosphere during the learning process. Previous research was carried out face-to-face or directly in class, while this research was carried out during the COVID-19 pandemic, so learning was carried out virtually so that it did not reflect actual classroom conditions. In addition, previous studies did not use educational games as learning media, while this study used the "Accounting Sharpening" games.

2. The Jigsaw Type Cooperative Learning Model with Accounting Teaching Media could improve the

Learning Achievement of the Basic Competencies of the Adjustment Journal; the proves were that the mean value of the Pre-test cycle I was 54.91 while the Post-test was 79.74 or it was increased by 24, 82. In cycle II, the average pre-test was 62.51, and the post-test average was 93.65, or there was an increase of 31.14, thus increasing the middle-class value when viewed from the post-test cycle I to cycle II amounted to 7.88. When viewed from the minimum mastery criteria in process I, the Post-test results showed that the percentage of the students who had completed the criteria was 57.14%, while in the Post-test cycle II results it was increased to 100%. It meant that student mastery had risen by 42.86%.

According to Arnyana (2018) in his journal explained that Collaboration could be trained through cooperative learning strategies and other learning strategies carried out in groups by bringing up cooperative values. Penelitian tersebut sejalan dengan penelitian ini, bahwa collaboration skill siswa dapat ditingkatkan melalui metode pembelajaran cooperative.

Suggestions

Based on the research that has been done before, the researcher provides suggestions for the future learning process so that it can run even better. This suggestion is taken by considering the discussion and conclusions

previously described. The directions given are as follows:

Suggestions for Teachers.

1. The Jigsaw learning model with the android-based educational game learning media Asah Akuntansi could improve the collaboration skills and the students Learning Achievement in the Basic Competencies of Adjusting Journal, so it could be used as one of the alternatives in the accounting learning model and media.
2. The teacher should apply various learning models to get a different learning atmosphere, and to make the learning model not monotonous. Therefore, that students do not feel bored when the learning process is carried out in class. However, the teacher must still pay attention to and consider the characteristics of students in its use.
3. The teacher supervises by asking for reports/evidence of the results of student activities to monitor the activeness and contribution of students in the group. Teachers can use other face-to-face applications such as Zoom, Skype, and Google Duo, which are more varied and easier to use.

Suggestion for Student

1. Students are expected to grow the spirit of Collaboration Skills in learning

activities that will be useful in the future.

2. Students are expected to help each other between other students. Students who are good at teaching less competitive students, so that the Learning Achievement of Basic Competencies of Adjustment Journal have increased.

Limitations

1. The Jigsaw Type Cooperative Learning Model application took a long time because it required sufficient preparation so that learning activities could run optimally. As a result, in this study, a lot of time was not following the plan's plan in the discussion activity.
2. The material measured Collaboration Skill Basic Competencies of Adjustment Journal and Learning Achievement in this study focused on Adjustment Journal material. It did not cover all the main subjects of Financial Accounting subjects.
3. In the implementation of the cycle I, there was one student who is absent due to illness, so there were changes in Learning Achievement and Collaboration Skills Basic Competencies Adjustment Journal from cycle I to cycle II and the score of the student who was absent could not be known.
4. The research was carried out online and did not reflect the actual conditions in

the classroom. Then, the classroom conditioning was challenging to implement because it was done virtually.

5. The questionnaire instrument used to measure collaboration skills in cycle I and cycle II uses the same indicator items and uses a self-rating so that the results of the questionnaire must be supported by field notes so that the results of the increase are in accordance with the actual situation.
6. The test instruments used in the pre-test and post-test are the same, this can cause bias or students "still remember the question" or there are practice-effect and carry-over effects, meaning that there are factors brought by test takers because they have worked on the questions.

Suggestions

Suggestions for further research should prepare everything carefully, such as allocating time before doing classroom action research. The application of the Jigsaw Type Cooperative Learning Model can run optimally.

1. Pay more attention to the implementation of time allocation so that learning can run optimally.
2. Further research can carry out classroom action research (CAR) with various learning models and technology-based learning media to deal with student problems when

Teaching and Learning Activities (KBM) occur in the digital era, especially in Basic Accounting subjects.

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