# IMPROVING STUDENTS' VOCABULARY ACHIEVEMENT THROUGH JIGSAW MODEL OF TEACHING AT FOURTH SEMESTER OF NURSING ACADEMY OF HELVETIA MEDAN

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#### **ABSTRACT**

This paper is the result of a study related to Class Action Research (CAR) conducted by using qualitative descriptive approach which focused on the analysis of collected data. This paper concerns with the improvement of vocabulary achievement used Jigsaw model of teaching formulated by Aronson in 1978. This model of teaching uses several cycles in conducting the treatments. If the first cycle cannot achieve the targeted score, the next cycles can be conducted again. This Class Action Research was conducted at Nursing Academy of Helvetia Medan for Fourth Semester Students. This paper aims at establishing the teaching and learning process which make students more active and creative in applying English skills especially vocabulary skill. The result shows that the implementation of Jigsaw model of teaching is very effective to achieve more than the minimum standard of the score (passing grade) in the learning process. This study finds that cooperative learning by using Jigsaw model of teaching can increase motivation of the students to study English especially English vocabularies.

**Keywords:** Class Action Research, Jigsaw Model of Teaching, Cooperative Learning.

#### A. Introduction

Learning English is one of the compulsory subjects at all levels of education. Learning English aims at improving students' ability to

communicate and to develop an appreciation of English.

In the current era of learning, English is focused not only in speaking activities but also listening, reading, and writing activities. To get all these competencies, students are stimulated to at least master more vocabularies.

Related to the above the present nursing phenomenon, academy students' achievement in English vocabulary in Academy of Helvetia Medan continuously poor as indicated by their scores in English lecture. The problem occurs not only in vocabulary mastery but also in other language skills such as; writing, speaking, reading and listening mastery. If this obstacle continues, then the learning of English at Academy level consequently will be ineffective and consequently will be in This weakness should overcome in order to make students more interested in Learning English. Vocabulary is an obligation for students to comprehend English well, without adequate vocabularies students have a lot of difficulties in learning English. It means that vocabulary is an important part of the language like components grammar, pronunciation, spelling, etc. Wilkin (1974: 111) explains that without grammar, very little can be conveyed, but without vocabulary nothing can be conveyed. It is possible to have good knowledge of how the system of language works and yet not be able to communicate in it; whereas if know the vocabulary we need, it is usually possible communicate well. Therefore, vocabulary should mastered as a fundamental skill to support the other skills in English. A good teacher has to encourage students

in mastering vocabularies as many as possible in order to enable them to communicate with others.

Considering the condition above, the researcher needs to provide a cooperative learning for helping students learn vocabulary mastery. of the appropriate and comprehensive methods for teaching vocabulary is jigsaw model teaching. Jigsaw model of teaching is an effective cooperative learning for combining learning partnership into groups (Kagan, 1989: 12). Jigsaw is teaching technique used in group instruction. It is cooperative learning technique appropriate for all students. Roger & Kagan (1992: 121) state that cooperative learning is group learning activity organized in such a way that learning is based on the socially structured change of information between learners in group in which learner is held accountable from his or her own learning and is motivated to increase the learning of others. It can be used early in the development of the "co-operative" and as with "think, pair, share" offers a high degree of engagement but slightly higher order interpersonal and small group skills are needed. This method has been proved by some researchers and it has improved the achievement of the students in mastering vocabulary. In this case, the students are expected to be enthusiastic to enrich vocabularies and they can explore their idea, feeling and thought in their group.

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**Home Group** 

Figure: The arrangement of students in their groups. Hakkarainen (2002).

#### B. METHODOLOGY

The method employed in this research was descriptive analysis, which included analysis of descriptive qualitative of the students' vocabulary improvement. One of the indicators of the improvement was the increasing of vocabulary scores. In this case, before applying the action, the researcher gave a pre-test to her students. In the end of the action, the researcher gave post-test in order to know the improvement of the vocabulary achievement. Vocabulary score as the result of pre-test and post-test in this research were analyzed by using inter rate score to find the mean score. The result of the test was to compare the result of reflection in each cycle.

This research also applied Classroom Action Research (CAR) and it was conducted by using qualitative descriptive approach which focuses on the analysis of the collected data. Action research is reflective process of progressive problem solving led by individuals working with others in teams as a" community practice" to improve the way they address issues and solve the problems. Action

research can also be undertaken by larger organization or institution, assisted or guided by professional researchers, with the aim of improving their strategies, practice, and knowledge (Taggart & Kemmis, 1988: 162).

Generally, Classroom Action Research (CAR) is applied to see the improvement at certain number of cycles, the research will not get a significant result yet, the research will still apply more cycle and the research will give treatment in teaching and learning process till the significant results have been got. Since it was a short period of research time, this research applied cycles implementing the four steps; planning, acting, observing and reflecting.

#### C. DISCUSSION

#### 1. The Process of the Research

This section is divided into three parts, namely the situation before the research, the implementation of the research consisting of Cycle I, Cycle II, Cycle III, final reflection, and the research findings.

## 2. The Situation before the Treatment

The situation before the treatment was identified in preresearch stage. The pre-research stage was held to get the base-line data of the research. The students of fourth semester of Nursing Academy of Helvetia Medan were included in the low category in English lecture especially for vocabulary Achievement. It was showed from the score of the pre-test given to the students to know their basic competence. The average score that the students got was still below the standardized score determined by the academy that is 60 to 65 as the minimum standard of achievement. The data of the students' achievement showed only 8 students (32%) got the score above 60, meanwhile 17 students (68%) were still under the minimum standard of achievement, and the average score of the class was 55,88. To make the above description referred, the following is the data of the scores of the pre-test conducted before the research.

#### Result of the Pre-Test before the Treatment

No	Names of Student	The Result Before Treatment	Remarks
1	Agustina Pertiwi	75	Passed
2	Ahmad Al Ansori	50	Remadial
3	Ahmad Borkat	67	Passed
4	Aidil Syahputra	45	Remadial
5	Beni Pandiangan	47	Remadial
6	Dina Wahyuni	50	Remadial
7	Fanbora	50	Remadial
	Tampubolon		
8	Hendro Suseno	50	Remadial
9	Iswar Habibi	45	Remadial
10	Iyul Visahri	62	Passed
11	Mulianto	70	Remadial
12	Nazmukdin	50	Remadial
13	Nurhayani	50	Remadial
14	Pediyus halawa	72	Passed
15	Pitri Rahma Wati	52	Remadial
16	Rabiatul Adawiyah	55	Remadial
17	Salman Alfarizi	65	Passed
18	Sonni Rapida	50	Remadial
19	Sri Yusita Wulandari	50	Remadial
20	Suhendra	50	Remadial
21	Sumarni	50	Remadial
22	Taufik Hidayat	70	Passed

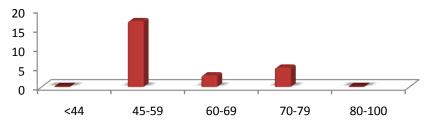
No	Names of Student	The Result Before Treatment	Remarks
23	Umi Habibah	52	Remadial
24	Witya Oktaviani	50	Remadial
25	Yael Margareth P.	70	Passed

From the table above, it is shown that 8 students had achieved the minimum standard of achievement; meanwhile 17 students did not achieve it.

Score Interval No Conversion Number of Percentage Students 1 80 - 1000 0% A 2 70 - 79В 5 20%  $\overline{\mathsf{C}}$ 3 3 60 - 6912% 4 45 - 59D 17 68% 5 Е 0 0% <44 Total 100%

The Score of Test before the Treatment

The table above will be clearer if it is shown through the following graphic: **Graphic: The Score of the Student's Achievement before the Treatment** 



The result of the analysis in the form of the above graphic shows that the students who got A (80-100) was 0% or there was no student got the score in that interval. The students got B (70-79) was 20% or 5 students, C (60-69) was 12% or 3 students, D (45-59) was 68% or 17 students and the students got E (<44) was 0% or there was no student in that interval. The

g is the table of the student's achievement before the treatment.

followin

The Students' Achievement Score before the Treatment

N o	Descripti on	Numbe r of Studen ts	Percenta ge
1	Passed	8	32 %

2	Failed	17	68%
		25	100%

The above table shows that the students passed the minimum standard of achievement was 8 students (32%), meanwhile 17 students (68%) did not achieve it.

The Average Score of the Test before the Treatment

No	Description	Score
1	Highest Score	75
2	Lowest Score	45
3	Average	55,88

#### 1. Cycle I

In this session, the researcher conducted the first treatment with some steps consisted of Planning, Acting, observing and reflecting.

#### a. Planning

To conduct the planning of cycle I, the researcher designed a lesson plan consisted of objective of learning and the learning action activities including material preparation, teaching material, and evaluation tool required for evaluation process.

#### b. Acting

In this action research, the implementation of cycle I consisted of two sessions.

#### 1. Session I in Cycle I

The researcher spent 15 minutes to give some explanation about the Jigsaw model of teaching by making groups which consisted of 5 students for each group. There were two groups which should be formulated in Jigsaw technique Home Group and Expert Group. The formation of the home group was by

giving the students numbers 1 to 5. Since there were 25 students, so there were 5 groups held. Each group had 5 students and each student had different numbers. After the formation of the home group had been formulated, then the student sat within their own group.

The researcher needed 15 minutes to explain the material pertaining to the vocabulary topic (Medical Item text) in detail which consisted of five subtopics included synonym, antonym, complementary pairs, converse and hyponym (see appendix). After giving explanation about the material to the students, the researcher transferred them to expert group which consisted of the students who had the same number as the others

In the expert group, the researcher distributed the five subtopics to each student to be discussed with the other students who sat in the same group. During the process of discussion, each student was extremely asked to be serious in understanding the topics given to them so that they became a real expert when they returned to the home group. After they had finished discussing the material in the expert group, they returned to the home group and became a real expert in their topic respectively. When the students were in the home group, they had an assignment to present or explain the topic that had been discussed in the expert group in detail that all the students really understood it. The process of discussion of the materials and the problems emerged during the learning process took 60 minutes.

#### 2. Session 2 of Cycle I

In this session, the students were gathered in the home group to review the topic that had been already discussed in the expert group. Each student was asked to explain again the topic to the other students. The purpose was to understand the topic well before having the test for evaluation of the cycle I. The activity was done in 45 minutes.

The next activity which was going to be done was the evaluation of the action in the cycle I by providing vocabulary test related to the discussed topics. It aimed at measuring the progress of the students in improving their vocabulary achievement. The researcher prepared the test material taken from the medical item text which was discussed in the home group and the expert group. The activity was conducted in 45 minutes. The length of the activity in this session was 2x45 minutes. The scores of the test were analyzed as the reflection for the next cycles. The following are the scores of the test of cycle I:

The Result of Vocabulary Test in Cycle I

No	Name of Student	The Result of the Test	Remarks
110	rame of Student	The Result of the Test	Acmar no
1	Agustina Pertiwi	100	Passed
2	Ahmad Al Ansori	94	Passed
3	Ahmad Borkat	91	Passed
4	Aidil Syahputra	91	Passed
5	Beni Pandiangan	97	Passed
6	Dina Wahyuni	88	Passed
7	Fanbora T.	85	Passed
8	Hendro Suseno	91	Passed
9	Iswar Habibi	94	Passed
10	Iyul Visahri	82	Passed
11	Mulianto	97	Passed
12	Nazmukdin	61	Passed
13	Nurhayani	73	Passed
14	Pediyus halawa	94	Passed
15	Pitri Rahma Wati	85	Passed
16	Rabiatul Adawiyah	79	Passed
17	Salman Alfarizi	100	Passed
18	Sonni Rapida	91	Passed
19	Sri Yusita W.	85	Passed
20	Suhendra	79	Passed
21	Sumarni	82	Passed
22	Taufik Hidayat	94	Passed
23	Umi Habibah	91	Passed
24	Witya Oktaviani	88	Passed

No	Name of Student	The Result of the Test	Remarks
25	Yael Margareth P.	97	Passed

#### c. Observing

From the table above, it is shown that all students (100%) had achieved their minimum standard of

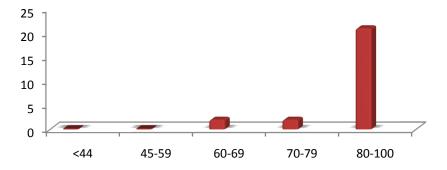
achievement and none of the students got the score under the minimum standard of achievement

The Score of Test of Cycle I

No	Score Interval	Conversion	Number of Students	Percentage
1	80 - 100	A	21	84%
2	70 - 79	В	3	12%
3	60 - 69	С	1	4%
4	45 – 59	D	0	0%
5	<44	E	0	0%
	100%			

To make the above table of the data clear, it can be looked at the following graphic:

Graphic: The Score of the Test of Cycle I



The above table and graphic show that there is significant improvement of the research achievement compared to the primary data in which only 32% (8 students) passed the minimum standard. The improvement of the students' research achievement is 100% (25 students) or from only 32% to 100% (from 8 students to 25 students).

From the data of cycle I, it can be seen that there were 21 students who got the score A (80-100) or (84%), B (70-80) 3 students (12%), C (60-69) 1 students (4%), D (50-59) 0% and no student also got E (<44) or (0%). The following is the data of the students' achievement in cycle I.

Students' Achievement of Cycle I

No	Achievement	Cycle	I
110	Acmevement	<b>Number of Students</b>	Percentage
1	Passed	25	100 %
2	Failed	0	0%
		25	100%

#### d. Reflecting

Based on the comparison of results of the condition before the research and the result of cycle I show significant improvement. None of the students failed or got the score under the minimum standard of achievement

in the cycle I. Before the research, there were 17 students failed but after the implementation of cycle I, no more students failed in the test. The comparison of the score can be seen in the following table:

The comparison of he Score before research to cycle I

			Number of Students	
No	Interval	Conversion	<b>Pre-Test Before the</b>	Cycle
			research	I
1	80-100	A	0	21
2	70-79	В	5	3
3	60-69	С	3	1
4	45-59	D	17	0
5	<44	Е	0	0
	Total	_	25	25

#### 2. Cycle II

Cycle II consisted of two sessions. Little different treatments were given in cycle II as the follow up of reflection of cycle I. The researcher changed the topic that students had in the cycle I but the students were still in their own previous group.

#### a. Planning

In this cycle II, each student was asked to change the topic of discussion. The students who were in the cycle I had the topic about a disease was changed to be another disease case in the cycle II. After they changed the topic then they were asked to discuss the topics to one another. However, the texts that had been used

in the cycle I were still used in the cycle II.

#### b. Acting

#### 1. Session 1 of Cycle II

In session I, the researcher asked the students to do the same as the previous Session I in the cycle I. They were asked to form the home group and discussed the various topics to other same friends in the home group before they went to the expert group. After the students had discussed the material of the topic, the researcher moved the students to the expert group by gathering them who had the same number in one group. So, each group had five students with the same numbers. In the expert group, the students spent their time to explore and

understand the topics which was owned by each student. The students moved to the home group after they had finished conducting discussion in the expert group. They were really expected to be an expert after returning from the expert group to present the result of the discussion to their. During the discussion the researcher continuously observed and helped the groups solve the problem they had. These activities were held for 90 minutes (2x45 minutes).

#### 3. Session 2 of Cycle II

In this session, the researcher asked and guided the students to review the material of the topic. After the students had learnt the topic, they moved to the expert group to discuss the topic further. While the students were discussing the topics, the researcher was helping the group

which needed explanation about the things happened during the discussion. These activities were held for 25 minutes. The students returned to the home group after they had discussed the topic from the expert group. Here, the researcher gave 20 minutes to the students to elaborate the result of discussion from the expert group to each student of the home group.

At the end of this session, the researcher conducted a test as the evaluation of all activities in order to know to what extend the student's vocabulary achievement improved after the implementation of cycle II. This activity was held for 45 minutes. The score of the test was analyzed as the reflection for the next cycles. The followings were the score of the test in cycle II.

The Result of Vocabulary Test in Cycle II

No	Name of Student	The Result of the Test	Remarks
1	Agustina Pertiwi	100	Passed
2	Ahmad Al Ansori	97	Passed
3	Ahmad Borkat	97	Passed
4	Aidil Syahputra	91	Passed
5	Beni Pandiangan	94	Passed
6	Dina Wahyuni	94	Passed
7	Fanbora T.	91	Passed
8	Hendro Suseno	94	Passed
9	Iswar Habibi	91	Passed
10	Iyul Visahri	94	Passed
11	Mulianto	100	Passed
12	Nazmukdin	94	Passed
13	Nurhayani	97	Passed
14	Pediyus halawa	100	Passed
15	Pitri Rahma Wati	97	Passed
16	Rabiatul Adawiyah	94	Passed

No	Name of Student	The Result of the Test	Remarks
17	Salman Alfarizi	100	Passed
18	Sonni Rapida	91	Passed
19	Sri Yusita W.	94	Passed
20	Suhendra	88	Passed
21	Sumarni	100	Passed
22	Taufik Hidayat	100	Passed
23	Umi Habibah	100	Passed
24	Witya Oktaviani	100	Passed
25	Yael Margareth P.	97	Passed

#### c.

#### Observing

From the table above, it is shown that all students (100%) had achieved their standard of achievement

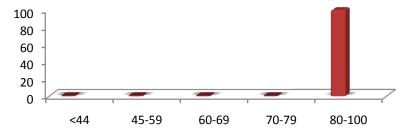
(KKM) and none of the students got the score under the standard of achievement (KKM).

The Score of the Test of Cycle II

No	Score Interval	Conversion	Number of	Percentage
			Students	
1	80 - 100	A	25	100%
2	70 – 79	В	0	0%
3	60 – 69	С	0	0%
4	45 – 59	D	0	0%
5	<44	Е	0	0%
	Total			

To clarify the table of the above data, we can look at the following graphic:

**Graphic: The Score of the Test of Cycle II** 



From the table and the graphic above it can be seen that the improvement of the students' research achievement from the cycle I to cycle II was 16% or from 84% to 100% (from 21 students to 25 students) who got score A.

From the data in cycle II, it can be seen that there were 25 students got the A score (80-100) or (100%), there was no student got B (70-79) or (0%), there was no student got C (60-69) or (0%), there was no student got D (45-59) or (0%) and no student got E (<44) or (0%). The following is the data of the students' achievement in cycle II.

Students' Achievement of Cycle II

		Cycle II		
o on		Numbe r of Studen ts	Percenta ge	
1	Passed	25	100 %	
2	Failed	0	0%	
		25	100%	

#### d. Reflecting.

Comparing the result of the cycle I and of the cycle II, it shows some significant improvements. There was no student who failed or was under the minimum standard of achievement. Moreover all the students got the score more than the minimum standard of achievement. In addition, the student who got very satisfactory result or 100 score increased from 8% (2 students) to 32% (8 students). In cycle I, there were a few students who got the score under the grade but after implementation of cycle II the number of the students who got the 100 score or A grade increased. So, the average score also increased from 87.88 to 95.8. The comparison of the score can be seen in the following table:

The Comparison of the Score of Cycle I to Cycle II

			Number of Students		
No	Interval	Conversion	Cycle I	Cycle II	
1	80-100	A	21	25	
2	70-80	В	3	0	
3	60-69	С	1	0	
4	45-59	D	0	0	
5	<44	Е	0	0	
	Total	_	25	25	

#### 4. Cycle III

Cycle III consisted of two sessions. Significant improvement happened in this cycle. All the students achieved the maximal score and no students failed in this cycle.

#### a. Planning

In cycle III, the students who were in the home group moved to the expert group to discuss deeper about the topic which had been prepared by the researcher. The material of the discussion was the same as the material discussed in the cycle I and II but each student was given the different topic of the material. For instance, a student had topic about Diabetes mellitus in the cycle I, Hypertension in the cycle II and lung cancer in the cycle III. It was hoped that the students improve their vocabulary achievement by changing

their roles by giving different topics not only in one topic but also in many other topics.

#### b. Acting

#### 1. Session 1 in Cycle III

The activities conducted in cycle III were not different from those happened in cycle II. In this session, the students were asked to be more serious and work harder in order to be able to memorize the key words in reading the text. It aimed to get maximal score by making no mistake in finishing the test.

#### 2. Session 2 in Cycle III

In this session, the treatment same as the previous treatments like in the cycle I and cycle The researcher and students reviewed the topic together until all the students understood and were ready to get the evaluation of the cycle III. The activity was done in 45 minutes. In the end of the cycle III, the researcher gave the test to evaluate the result of the treatment. The activity was done in 45 minutes. The scores of the test were analyzed as the reflection for the next cycles. The followings are the score of the test in cycle III.

The Result of Vocabulary Test in Cycle III

The Result of Vocabulary Test in Cycle III					
No	Name of Student	The Result of the Test	Remarks		
1	Agustina Pertiwi	100	Passed		
2	Ahmad Al Ansori	100	Passed		
3	Ahmad Borkat	100	Passed		
4	Aidil Syahputra	100	Passed		
5	Beni Pandiangan	100	Passed		
6	Dina Wahyuni	100	Passed		
7	Fanbora T.	100	Passed		
8	Hendro Suseno	100	Passed		
9	Iswar Habibi	100	Passed		
10	Iyul Visahri	100	Passed		
11	Mulianto	100	Passed		
12	Nazmukdin	100	Passed		
13	Nurhayani	100	Passed		
14	Pediyus halawa	100	Passed		
15	Pitri Rahma Wati	100	Passed		
16	Rabiatul Adawiyah	100	Passed		
17	Salman Alfarizi	100	Passed		
18	Sonni Rapida	100	Passed		
19	Sri Yusita W.	100	Passed		
20	Suhendra	100	Passed		
21	Sumarni	100	Passed		
22	Taufik Hidayat	100	Passed		
23	Umi Habibah	100	Passed		
24	Witya Oktaviani	100	Passed		
25	Yael Margareth P.	100	Passed		

#### c. Observing

From the table above, it is shown that 25 (100%) students had got very satisfactory result 100 score in the

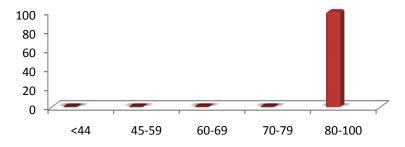
test of the cycle III. There was no student failed in this cycle and they got the score more than minimum standard of achievement

The Score of Test of Cycle III

No	Score Interval	Conversion	Number of	Percentage
			Students	
1	80 - 100	A	25	100%
2	70 – 79	В	0	0%
3	60 – 69	С	0	0%
4	45 – 59	D	0	0%
5	<44	Е	0	0%
Total				100%

To clarify the above data, we can look at the following graphic:

**Graphic: The Score of the Test of Cycle III** 



From the table and the graphic above it can be seen that the improvement of the students' research achievement from the cycle II to cycle III increased. The result of the cycle II, the lowest score was 88 and the highest score is 100, meanwhile in the cycle III 100 score became the highest and the lowest was 0. So, 100% (25 students) got score A in the cycle II and cycle III. The change happened between two cycles was in the level of the score.

From the data in cycle III, it can be seen that there were 25 students got the A score (80-100) or (100%), there was no student got B (70-79) or (0%), there was no student got C (60-69) or (0%), there was no student got

D (45-59) or (0%) and no student got E (<44) or (0%). The following is the data of the students' achievement in cycle III:

Students' Achievement of Cycle III

			Cycle III		
	N 0	Achievem ent	Numbe rs of Studen ts	Percenta ge	
	1	Passed	25	100 %	
2	2	Failed	0	0%	
		Total	25	100%	

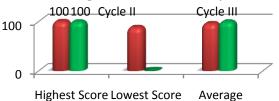
#### d. Reflecting.

Based on the result from cycle II and cycle III, it shows some significant improvement. All the students had achieved the standard minimum achievement, even more than that. In the cycle II, the whole students got A score with the average 95.8 and in the cycle III, the whole student got A score with the average 100. So, the average score also increased from 95.8 to 100. The comparison of the score can be seen in the following table:

The Comparison of the average Score in Cycle II to Cycle III

No	Description	Cycle	Cycle
		II	III
1	Highest	100	100
	Score		
2	Lowest	88	0
	Score		
3	Average	95.8	100

Graphic: The Average of the Score in Cycle II to Cycle III



Based on the result of the observation and the reflection above, it could be concluded that there were significant improvement after the implementation of the activities in cycle III. Owing to this significant improvement on this cycle, researcher was quite sure that this Jigsaw model of teaching could be effectively used as the reference for the teaching of English especially on vocabulary achievement. In addition, it was clearly seen that the students felt enthusiastic to conduct the whole process of teaching and learning activities.

#### CONCLUSION

Jigsaw model of teaching is one of the teaching methods used by many

researchers to improve students' ability in several subjects. This proves that jigsaw technique is very effective to play its role.

From the discussion above, the implementation of the **Jigsaw** technique is an effective model which can increase the students' vocabulary achievement. It is clearly seen from the students' participation followed each treatment. In cycle I and cycle II conducted during treatment the experienced very significant progress in scoring. They got the score more the minimum standard achievement. In the last Cycle or Cycle III, the students achieved the highest score until 100. None of them got the score less than that. The result shows that the using of Jigsaw model of teaching is very effective to improve the students' vocabulary mastery and encouragement in increasing their English skill.

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