THE USE OF MODIFIED JIGSAW TECHNIQUE TO IMPROVE TENTH GRADE STUDENTS' WRITING ABILITY

Rifka Arina Ruantika, Ujang Suparman, Ari Nurweni
University of Lampung, arina.rifka@gmail.com

Abstract

Penelitian ini bertujuan i) untuk mengetahui perbedaan kemampuan menulis siswa yang diajar dengan teknik jigsaw asli dan teknik jigsaw yang dimodifikasi ii) untuk mengetahui aspek menulis paling meningkat setelah para siswa menerima perlakuan menggunakan kedua teknik tersebut. Subjek penelitian ini adalah para siswa kelas sepuluh di SMKN 1 Natar. Peneliti menggunakan tes menulis untuk mengumpulkan data penelitian ini. Hasil penelitian ini menunjukkan ada suatu perbedaan yang siginifikan pada kemampuan menulis siswa antara siswa yang diajar dengan teknik jigsaw asli dan yang dimodifikasi. Selain itu, tatabahasa adalah aspek menulis paling meningkat setelah para siswa menerima perlakuan menggunakan teknik jigsaw asli dan yang dimodifikasi. Dari hasil penelitian tersebut, bisa dikatan bahwa teknik jigsaw asli dan yang dimodifikasi adalah teknik yang bisa digunakan untuk meningkatkan kemampuan menulis siswa terutama pada aspek tatabahasa.

This research was aimed i) to find out whether there was a difference of students' writing ability between the students taught using original jigsaw technique and those taught using modified jigsaw technique ii) to find out which writing aspect that improved the most after the students received the treatment using those two techniques. The subjects of this research were the tenth-grade students of SMKN 1 Natar. The researcher used writing tests in collecting the data of the research. The results showed that there was a significant difference in students' writing ability between the students who were taught using original and modified jigsaw techniques. Besides, it showed that grammar was the most improved writing aspect after the students received the treatment using original and jigsaw techniques. From the results of the research, it can be stated that the original and modified jigsaw techniques were good techniques that can be used to improve students writing ability especially on grammar aspect.

Keywords: *Jigsaw Technique, Modified Jigsaw technique, writing aspect, teaching writing.*

INTRODUCTION

Writing is one of four basic skills of language which is very important in language learning. Writing is considered as a productive skill whose goal is to assist the students in expressing their ideas in the written form. However, writing is still considered as a complex skill to be mastered by students since it requires complex thinking. Sometimes, it is hard for the students to express their words, opinions, ideas or feelings in written form. When students want to write about something, they must have a lot of ideas and information about something that will be written, so that they will be able to transfer those ideas into a written text.

Richard (2002) also states that writing is the most difficult skill to be mastered by L2 learners. He states that the difficulty of writing lies not only in generating and organizing ideas but also in translating the ideas into reliable text. That is why L2 learners need to pay attention to higher-level skills of planning and organizing as well as the lower-level skill of spelling, punctuation, word choice and so on.

Besides that, writing needs to be supported by the right rules, Jacobs et al (1981) state that there are five components of writing, namely content, organization, grammar, vocabulary, and mechanics. These components are related to each other to produce good results in writing. That is why writing is considered as the most complex language skill to be learned compared to the other language skills, namely speaking, listening and reading.

In doing this research, the researcher chose SMKN 1 Natar as the subject of the research. SMKN 1 Natar is a senior high school which is located in South Lampung, Lampung. Based on the pre-research that had been done by the researcher, it was found that the students of SMKN 1 Natar had poor ability in English especially in writing. In pre-observation, the researcher asked the students to write a text about personal recount and from the results of the test, it was found that 8 students out of 10 (80%) could not write their idea systematically.

Students' poor writing ability could be proven by some mistakes that were made by the students in the writing test. The students did many mistakes in grammar, choosing appropriate words, developing main ideas and making concluding sentences. In order to help the students in mastering writing skill, the teacher needed to find a compatible technique that can be used in the writing class.

In this case, the researcher focused on modifying a technique namely jigsaw technique by inserting the steps of peer-correction. Setiyadi et al (2018) state that, jigsaw technique is one of the techniques that can be used to teach integrated skills for students. Jigsaw technique is an effective way to increase student's engagement in the teaching-learning process through group work that makes peer-to-peer learning easy to do (Shume, 2016). Through jigsaw technique, the students can develop the skills to work effectively in groups and it also encourages cooperation and collaboration between students which is important for achieving a better balance between competition and cooperation in students' experience of education.

Besides jigsaw technique, the other technique that could be used to improve students' writing skill is peer-correction. Peer-correction is a technique whereby

the students or their peers correct the assignments or tests based on the teacher's benchmarks. The practice was employed to save the teacher's time and improve students' understanding as well as their metacognitive skills. Peer-correction is a technique that enables the students to get feedback when the students correct their drafts in pairs. Kelly (2014) states that peer-correction is defined as a process of correcting someone's work, research or idea by someone expert in the same field. Sackstein (2017) states that a side benefit of empowering students to provide feedback or correction to one another is the awareness they gain as learners. Providing students with regular opportunities to give and receive peer feedback enriches their learning experiences in powerful ways. Through this technique, the students were able to realize and correct the mistakes they made in their writing and finally improve their writing ability.

In this study, the researcher modified a teaching technique, jigsaw, by inserting the steps of peer-correction technique. The researcher used jigsaw technique to help the students wrote their recount text, after the students finished it the researcher asked the students to do peer-correction to make them aware of their mistakes and finally they could correct those mistakes. The researcher believed that by modifying this technique the students could gain more benefits in the learning process and their writing ability could improve significantly. The effect of jigsaw and peer-correction on improving students' language skill and achievement has been proven by some previous researches which were elaborated bellow.

The researches related to the effect of jigsaw technique toward students' English achievement have been done by some researchers namely Evcim (2010), Al-Elaimat (2013), Al Salkhi (2015), and Sugianti (2016). In their research, they proved that jigsaw technique was an effective technique that could be used to improve students' English achievement. The other researchers, Sahin (2011), Kazemi (2012) and Hoerunisa (2017) did some researches about the effect of jigsaw technique in improving students' reading comprehension. Form their research it was proved that there was a significant improvement on students' reading comprehension after jigsaw technique was applied. The researches which proved that jigsaw technique was able to improve students' writing also had been done by some researchers namely Sahin (2011) and Zahra (2014). Through their researches, they proved that jigsaw was an effective technique that could be used by the teacher to improve students' writing ability.

The next previous researches are on the effect of peer-correction in improving students' English achievement and skills. The researches on the use of peer-correction to improve students' speaking ability, had been done by a researcher, Patri (2002), who focused on finding the effect of peer-correction on students' speaking ability and the results showed that students' speaking ability improved after the students did peer-correction. Many researchers investigated the effectiveness of peer-correction on improving students' writing ability. Some of them are Moussoaui (2012), Ayachi (2017), and Gencha (2018) who found that peer-correction had a significant effect on students' writing and the students that were taught by peer-correction had better writing competency than those who were assessed using conventional correction.

Based on the previous researches above the researcher was interested in conducting a research to find out the use of the techniques above, jigsaw and peer-correction technique in improving students' writing ability. The researcher conducted this research because it had been proven by the previous researches above that the two techniques could be used to improve students' writing ability but in the previous researches above the researchers only focused on one of the techniques. None of them tried to modify these techniques. Besides that, the researcher modified the technique because based on the previous research jigsaw technique was able to improve students' aspects of writing namely content and organization. However, the other 3 aspects of writing had not been touched by jigsaw technique and it could be improved by inserting the steps of peer-assessment in the revising steps. So, in this research, the researcher modified jigsaw technique by inserting peer-correction steps in order to know whether the modified jigsaw would make better improvement on students or not compared to the original jigsaw. Besides the researcher would also investigate which writing aspect that improved the most after the researcher applied modified jigsaw technique in students' writing class.

METHOD

This research was a mix method which research which was intended to find out whether the modified jigsaw technique can be used to improve students' writing ability better than the original one or not. Then, in conducting this research, the researcher applied true experimental design, pretest-posttest control group design, which refers to Hatch and Farhady (1982). The population of this research was two groups of tenth-grade students who were studying in the second semester of the academic year 2018/2019 at SMKN 1 Natar. The sample of this research was the students of class X accounting 1 and 2 which consist of 21 and 23 students each. In choosing the sample, the researcher used purposive random sampling to make sure that the members of the class were homogeneous in their skills and capacities before the treatment was done. In collecting the data of the research, the researcher used an instrument, writing test, to collect the data of students' writing ability. The data of students writing ability were analyzed using t-test of SPSS 25 program.

RESULT AND DISCUSSION

In order to answer the first research question, the data of students writing ability were analyzed using *t-test* on SPSS version 25 to find out the difference in students writing ability between the students who were taught using modified and original jigsaw technique.

Table 1. The Improvement in Students' Scores in the Experimental and Control Class

Groups	N	Pretest Average	Posttest Average	Sig. (2-tailed)	Gain
Control Class	23	65.78	76.56	.000	10.78
Experimental Class	21	68	81.05	.000	13.05

From the table above, we can see the improvement in students' writing ability before and after the treatment which is indicated from the gain of each class. However, it can be seen that the gain of the experimental class is higher than the control class which indicates that the treatment that was applied in the

experimental class could be used to make better improvement than the treatment that was applied in the control class. Besides, from table sig. (2 tailed) we can see that the significance for both classes is 0.000, smaller than 0.05 which indicates that there is a significant improvement in students' scores from the pretest and posttest in the control and experimental classes. It means that the technique that was applied in the control class, original jigsaw technique, and experimental class, modified jigsaw technique, could be used to improve students' writing ability significantly.

However, the main purpose of this research is to find out the difference in students' writing ability of the control and experimental class. So, *Independent t-test* was used to find out the difference in students' writing ability who were taught using modified and original jigsaw technique.

Table 2. The Difference in Students' Writing Ability of Control and Experimental Class

Independent Samples Test										
		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Students' Score	Equal variances assumed	4.086	.056	2.526	42	.015	4.4824	1.7744	8.0633	.9015
	Equal variances not assumed			2.602	32.037	.014	4.4824	1.7229	7.9918	.9730

The mean difference value of students' writing is 4.4824. This value showed the different range of the students' scores average between control and experimental group. As have been stated before that the results of the pretest and posttest in both classes showed that the original and modified jigsaw techniques could be used to improve students' ability in writing recount text. Based on the results of computation in Table 4.6., it can be seen that the value of sig. (2 tailed) is 0.015 which is lower than p value. If the value of sig. (2 tailed) is lower than p value (0.05) it means that there was a significant difference in students writing ability that were taught using original jigsaw technique and the modified one.

Hypothesis testing using *Independent Sample T-test in* the level of trust 95% or the same as the value α = 5%. As α value of this research is 0.05 we can find the value of t table using α/2 formula. Based on the calculation the t value of this research was 0.05/2 = 0.025. In order to see whether the hypothesis of this research was accepted or rejected, the researcher compared the T value and T table and it was found that T table of this research was 2.01808 and T value was 2.526. From this finding, it can be stated that T value was higher than T table which means the hypothesis of this research was accepted. The results indicated that there was a significant difference in students' writing between the control and experimental classes.

These results confirm the results finding of previous research that was done by Zahra (2014) who investigated the effect of jigsaw technique in improving students' writing ability by comparing it with conventional technique. In her research it was proven that jigsaw technique could be used to improve students' writing ability and jigsaw was a better technique than conventional technique. As have been stated before, in this research, the researcher also found that jigsaw technique was effective to improve students' writing ability which can be proven by the increase scores of pretest and posttest of the students in control class.

Aprianti (2017) also conducted a research on the effective use of jigsaw in teaching descriptive text writing. In her research she found that there is increase on students' pretest and posttest scores

after she implemented jigsaw technique in students' writing class. However, the results of her research were not significant and she suggested that the technique to be modified in order to meet students' need in learning process. In order to confirm the suggestion that was suggested by Aprianti (2017), the researcher tried to modify jigsaw technique to make better improvement on students writing ability.

In addition, Zhu (2016) had tried to combine jigsaw reading activity and semantic mapping activity, to investigate its effect on students' writing and reading ability. From her research, it was found that the combination of two techniques could be used to improve students' reading and writing ability. Zhu's research proved that it was possible to modify jigsaw technique in order to improve students' writing ability. However, she did not mention whether the results were significant or not.

In order to confirm two previous research findings above, the researcher tried to modify jigsaw technique using the steps of peer-correction. The researcher inserted the steps of peer-correction in the end of jigsaw activities and the results showed that there is significant improvement on students' writing ability after the researcher applied modified jigsaw technique. The reason why the researcher chose peer-correction was because there are some previous researches which proved that this technique could be used to enhance students' writing ability.

The results of this research showed that peer-correction could be used to improve students' writing ability which was proven by the significant difference of posttest mean of modified jigsaw technique and original jigsaw technique.

The results of this research were supported by the results findings of previous research that was done by Ayachi (2017) who compared the effect of peer-correction and teacher correction toward students' writing ability. From her research it was found that there was a significant difference on students' writing scores. The students who were taught using peer-correction had higher posttest mean compared to the students who were taught using teacher correction.

However, the main focus of this research was to find out whether modified jigsaw technique can be used to make better improvement than the original technique or not. Since there was no previous research which confirms which technique was better, this research confirms that the modified jigsaw technique could be used to make better improvement than the original technique. It can be proven by the mean of the posttest of both classes which showed that the posttest's mean of the experimental class (modified jigsaw technique) is higher than control class. The results of *Independent Sample t-test* showed that the sig. (2-tailed) was 0.015 which is lower than 0.05 and indicates that there is a significant difference between the posttest mean of control and experimental classes.

The reason why the modified jigsaw technique can be used to improve students writing ability better than the original jigsaw technique is because in the modified jigsaw technique, the students did peer-correction in which they corrected other students' writing during the teaching-learning process. During this process the students learned how to correct their mistakes and it made their writing ability improved. These results supported by the research done by Ayachi (2017) as have been explained

above. That is why students writing ability in the experimental class showed a significant difference compared to the The second research question of this research focused on finding out which aspect of writing that improved the most after the researcher applied the modified and original jigsaw technique.

Table 3. Writing Aspect's Analysis in Control Class.

	Pretest Score (Pre)	Posttest Score (Post)	Gain (Post-Pre)	Improvement ((Post-Pre)/ Pre*100%)	Sig. (2-tailed)
Content	19.74	22.28	2.54	13	,002
Organization	13.37	15.65	2.28	17	,000
Vocabulary	13.96	15.26	1.31	9	,009
Grammar	14.24	18.83	4.59	32	,000
Mechanic	4.48	4.54	0.06	13	,544

From the table above it can be seen that the writing aspect that improved the most after the treatment using original jigsaw technique was grammar with gain 4.59 and 32% improvement which indicated that original jigsaw technique affected students' grammar the most during writing. Followed by organization with gain 2.28 and 17% improvement, content with gain 2.54 and gain 13% improvement, mechanic with 0.06 and 13% improvement and the last was vocabulary with 1.31 gain and 9% improvement. The results of the analysis show that the original jigsaw technique was effective to improve students' writing aspect, especially grammar. It might be caused by the discussion that the students do during jigsaw activities.

However, the students still need to improve their vocabulary in writing because this aspect was increased the least compared to other writing aspect. This might be caused by students' poor vocabulary mastery which could not be improved by the jigsaw activities that

control class students who were taught using original jigsaw technique.

had been done by the students in their writing class. The data of students' writing aspects also computed using SPSS ver.25 to see whether the improvement of the writing aspect is significant or not. The results of the calculation show that the improvement in content, organization, vocabulary, and grammar is significant. However, the improvement in mechanics is not significant because the significant value is higher than 0.05.

The reason why students' grammar improved the most after being treated using original jigsaw technique is because the discussion that was done by the students during jigsaw activities. Most of the students said that during the discussion their group mates helped them in correcting their grammar and they also got a lot of ideas from their friends during the discussion. Besides, it can also happen because the researcher gave a little help while walking around the class to check students' work.

As have been stated in the result of the calculation related to the significant level, mechanics is the only writing aspect that was not improved significantly. It can be caused by students' habit in writing that cannot be improved significantly in a short time. The students were accustomed to writing the sentence in lowercase letter, not put full stop (.) in the end of sentence, using coma (,) wrongly in writing the sentence.

Table 4. Writing Aspect's Analysis in Experimental Class.

Aspects of Writing	Pretest Score (Pre)	Posttest Score (Post)	Gain (Post-Pre)	Improvement ((Pre-Post) /Pre*100) %	Sig. (2-tailed)
Content	19.45	23.52	4.07	21	,000
Organization	13.9	16.47	2.57	18	,000
Vocabulary	14	15.71	1.71	12	,002
Grammar	16.12	20.21	4.09	25	,000
Mechanic	4.54	4.69	0.15	3	,110

From the table above, it can be stated that grammar was the writing aspects that improved the most after the researcher applied modified jigsaw technique in students' writing class. It can be seen from the gain (0.49) and 25% improvement. It was same with the results of the control class in which grammar was the writing aspect that was increased the most after the students received the treatment.

However, the following aspects' sequence after grammar was different from the control class. In the experimental class after grammar, it was followed by content with gain 4.07 and 21% improvement, then organization with gain 2.57 and 18% improvement, vocabulary with gain 1.71 and 12% improvement and the least improved writing aspect in the experimental class was mechanic with gain 0.15 and 3% improvement. The data of students' writing aspects also computed using SPSS ver.25 to see whether the improvement of the writing aspect is significant or not. The results of the calculation show that the improvement in content, organization, vocabulary, and grammar is significant. However, the improvement in mechanics is not significant because the significant value is higher than 0.05.

The reason why students' grammar improved the most after being treated using the modified jigsaw technique is similar to the control class which is because the discussion that was done by the students during jigsaw activities. Besides, in the modified jigsaw technique the students corrected their friends' writing after the discussion. The peer-correction that was done by the students helped them to improved their writing aspects especially grammar because their friends gave them some corrections about grammar.

Similar to the control class mechanic was the only writing aspect that not improved significantly. Even though there was improvement in this aspect but after the calculation it was found that the improvement was not significant. the reason was similar to the control class which is caused by students' writing habit that cannot be fixed in a short time. The teacher needs longer time to fix students' habit in writing.

There are some previous researches that explored about the effect of jigsaw in improving five writing aspects above for examples the research that had been done by Zahra (2014) and Aprianti (2017). The results of this research confirmed the results of the previous research that was done by Zahra (2014). In her research it was found that among the five aspects of writing, original jigsaw technique works effectively in improving grammar. She stated that this improvement was caused by students' understanding about descriptive text. In which during the pretest most of the students used past tense in writing descriptive text and in the posttest, they finally understood that they should use present tense in writing descriptive text. Students' understanding about descriptive text caused a big improvement in grammar aspect which

is the most affected writing aspect in Zahra's research.

However, the results of this research related to the most affected writing aspect are different from the results findings of Aprianti (2017) who found that among the aspects of writing, content was the aspect that improved the most after she used jigsaw in teaching descriptive text. She stated that this improvement might be cause by the group activities that made the students interacted each other and supported students' communication ability. During the discussion, she found that the students gave more attention on the content of the text. She believed that this was the main reason why content was the most affected compared to other writin g aspects. From the explanations above it can be stated that both of the techniques could be used to improve students' writing aspects especially in grammar.

CONCLUSIONS

Modified jigsaw can be a helpful learning technique that can be used in teaching learning process of writing class. After being taught using modified jigsaw technique students' writing ability is improved significantly which can be caused by the discussion during jigsaw activities which makes the students actively engage in the teaching learning process. In the control class, there is a significant improvement in the students' writing ability after the researcher applied the original jigsaw technique. However, from the calculation, it can be concluded that there was a significant difference in the students' posttest mean between the control and experimental class, in which the students' posttest mean of the

experimental class is higher than of the control class. Then

The original and modified jigsaw technique can be an effective learning technique that can be used to reduce the students' problems in all writing aspects. It is found that the most improved writing aspects for both control and experimental class is grammar or language use.

REFERENCES

[1] Al-Eliamat. 2013. The Effect of Cooperative Learning Based on Experts' Group (Jigsaw 2) in the Direct Postponed Achievements for Princess Rahma University College Students in English 99. *International Journal of Education 2013 Vol 4 No 3. Retrivied on January 15, 2019.*

[2] Al-Salkhi, M. J. 2015. The Effectiveness of Jigsaw Strategy on the Achievement and Learning Motivation of the 7th Primary Grade Students in the Islamic Education.*IJHSS Vol 5 No 4 April 2015. Retrivied on January 15, 2019.*

[3] Aprianti, N., Rufinus, A., & Wardah. The Effective Use of Jigsaw in Teaching Descriptive Text Writing. *Teacher Training and Education Faculty of Tanjungpra University.*

[4] Ayachi, Z. 2017. Peer and Teacher Assessment in EFL Writing Compositions: The Case of Advanced English Major Students in Jendouba, Tunisia. *The Reading Matrix: An International Online Journal Vol 17, No 1, April 2017. Retrivied on January 15, 2019.*

[5] Evcim, H., Ipek, O. F. 2012. Effects of Jigsaw II on Academic Achievement in English Prep. *Elsevier Ltd. Retrivied on January 15, 2019.*

[6] Fennel, H-A. 1992. *Students' Perceptions of Cooperative Learning Strategies in Post-Secondary Classrooms*. Thunder Bay. ERIC

[7] Gencha, M. G. 2018. The Effect of Peer Assessment on English Language Writing Instruction & the Perceptions of Students: The Case of Selected Accounting CEP Students at Hawassa University in Focus. *IOSR-JHSS Vol 23, Issue 5, Ver 3. Retrivied on January 15, 2019.*

[8] Hatch, E. & Farhady. 1982. *Research design and Statistics for Applied Linguistics*. London: Newbury House Publishers

[9] Hoerunnisa, N. & Suherdi, D. 2017. The Effectiveness of Jigsaw in Improving Students' Reading Comprehension. *Journal of English and Education Vol 5 No 1. Retrivied on January 15, 2019.*

[10] Jacobs, H. L., Stephen, A., Zingkgraf., Deanne. R., Wormuth, V., Faye, H.,Jane, B., Hughey. 1981. *Testing ESL Composition: A Practical Approach*.Rowley: Newbury House Publishers, Inc.

[11] Kazemi, M. 2012. *The Effect of Jigsaw Technique on the Learners' Reading Achievement: The Case of English as L2*. MJAL Vol 4 Ver 3 Autumn 2012. Retrivied on January 15, 2019.

[12] Kelly, J. 2014. *Peer Review in Scientific Publications:Benefits, Critiques, & A Survival Guide.* JIFCC 2014 Vol25No3pp227-243. Retrivied on January 15, 2019.

[13] Moussaoi, S. 2012. *An Investigation of the Effects of Peer Evaluation in Enhancing Algerian Students' Writing Autonomy and Positive Affect.* Elsevier (ICEEPSY 2012). Retrivied on January 15, 2019.

[14] Partri, M. 2002. *The Influence of Peer Feedback on Self and Peer-Assessment of Oral Skills.* Language Testing 2002 19 (2) 109-131. Retrivied on January 15, 2019.

[15] Richard, J.C. 2002. *Methodology in Language Teaching: An Anthology of Current Practice.* Cambridge. Cambridge University Press.

[16] Sackstein, S. 2017. *Peer Feedback in the Classroom: Empowering Students To Be Experts.* Alexandria: ASCD.

[17] Sahin, A. 2011. *Effects of Jigsaw III Technique on Achievement in Written Expression.* Asia Pasific Educ Rev.2011. Retrivied on January 15, 2019.

[18] Setiyadi, Ag. B., Sukirlan, M., Mahpul. 2018. *Teaching Language Skills: Preparing Materials and Selecting Techniques.* Yogyakarta: GrahaIlmu.

[19] Shume, T. 2016. *The Jigsaw Method and Cooperative Learning*. Retrivied from

http://www.sesync.org on January 15, 2019.

[20] Sugianti 2016. *The Implementation of Jigsaw Technique to Teach Poetry of Buya Hamka*. IOSR-JRME Vol 6 Issue 2 Ver 1. Retrivied on January 15, 2019.

[21] Zahra, R. O. 2014. *The Use of Jigsaw Technique in Improving Students' Ability in Writing A Descriptive Text*. Journal of English and Education 2014, 2(1), 64-75. Retrieved on January 15, 2019.

[22] Zhu, J. 2016. *Using Jigsaw Reading and Semantic Mapping Activities to Develop English Reading and Writing Abilities Among Mathayom Suksa 4 Students*. International (Humanities, Social, Sciences and Arts) E-Journal Vol 9 No 5. Retrivied on January 15, 2019