



Mind Mapping to Improve Students' Speaking Skill

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Abstract This research aims to measure the implementation of mind mapping on improving students' speaking skill. The method of this research was Classroom Action Research. The participant in this classroom action research was 44 students of grade X-2 TKJ of SMK N 1 Panyabungan, Mandailing Natal - Sumatera Utara. The instrument consisted of mind mapping practice, speaking test, observation sheet, and interviews. The data of this research was analyzed two methods of data analysis. Quantitative data analysis was used to examining and interpreting data from Mind Mapping practice and speaking test. The data taken from observation and interview was used qualitative data analysis. The result shows that (1) Mind Mapping better improves the students' Speaking Skill. This can be evidence from the students' means which better gradually improved in cycle one, and (2) the researcher found that the changes of students' speaking skill are influenced by six factors, namely, interesting teaching media, interesting material, attractive classroom activities, enjoyable classroom management, attractive teacher's approach, teacher strategy.

Keywords: Speaking Skill; Mind Mapping; Descriptive Text; Classroom Action Research; Teacher Strategy.

Abstrak Penelitian ini pada dasarnya bertujuan untuk mengukur implementasi peta pikiran dalam meningkatkan kemampuan berbicara siswa kelas X-2 TKJ SMK N 1 Panyabungan, Mandailing Natal- Sumatera Utara. Metode dalam penelitian ini menggunakan Metode Penelitian Tindakan Kelas. Peserta dalam penelitian ini adalah 44 orang siswa kelas X-2 TKJ SMK N 1 Panyabungan. Instrument Penelitian ini menggunakan Peta pikiran, tes kemampuan berbicara, lembar observasi dan wawancara. Data pada penelitian ini di analisa dengan menggunakan dua metode analisis data. Analisis data kuantitatif digunakan untuk menilai dan menginterpretasikan data yang berasal dari latihan peta pikiran dan tes kemampuan berbicara. data yang berasal dari observasi dan wawancara dianalisa dengan menggunakan analisa data kualitatif. Hasil penelitian menunjukkan bahwa; (1) peta pikiran berhasil meningkatkan kemampuan berbicara siswa, khususnya untuk komponen pengucapan, kosakata, dan kelancaran. Dan (2) peneliti menemukan perubahan kemampuan membaca siswa dipengaruhi oleh enam faktor, yaitu media pembelajaran yang menarik, materi yang menarik, kegiatan belajar di kelas yang menyenangkan, pengelolaan kelas yang menyenangkan, pendekatan guru yang menarik, dan strategi mengajar guru.

Kata Kunci: Kemampuan Berbicara ; Peta Pikiran; Descriptive Teks; Penelitian Tindakan Kelas; Strategi Guru.

INTRODUCTION

Speaking is one of the important skills mastered by the student in a foreign language. It involves a process of building and sharing feeling, idea or messages through the use of the language orally. In specific Nunan (1991; 2003: 48) mention speaking is a productive oral skill and it consists of producing systematic verbal utterances to convey meaning. By learning speaking, the students will know the way to express language communicatively. The students will learn how to express utterances meaningfully. Because of that speaking is one of important skills that should be mastered by the students learning foreign language besides reading, listening and writing.

According to Brown, (1980:4; 2001:267; 2008); Burns and Joyce (1997); Spratt, Pulverness, & Williams (2005), speaking is “an interactive process of constructing meaning that involves producing, receiving and processing information”. Next, McDonough (2004); Yashima (2002) in Zhong, et all, (2017) English-speaking skills require, at a minimum, an authentic context and partners to communicate with. The form and the meaning are depending on the context in which it occurs. People generally use speaking as a means of communication in daily interaction. Each of the speaker and the listener must to build up a mutual communication in speaking activity in order to the communication is clear, both of the listener and also the speaker get the meaning or information in that conversation. To strengthen opinions about the importance of speaking ability in mastering foreign languages Richard, (2001); Bahadorfar, M., & Omidvar (2014); Maharani, (2016) declare to master English as a second language speaking ability is one of the top priorities that must be mastered. A teacher for English as a foreign language must play their role as facilitator to help students in improving speaking skill (Siregar, 2017).

For Senior High School or Vocational High School, the speaking skill is taught Genre Based Approach. A descriptive text is one type of genre taught to the students in Vocational High School. Winch (2005); Sholah (2013) stated descriptive text is how to describes distinctive something such as a place, locations, a person, animals or anything that happen in nature. The purpose of teaching speaking through descriptive texts in describing objects is to make the students able to use the language communicatively and meaningfully by not only paying attention on its language features and generic structure but also by using appropriate vocabulary, good pronunciation, fluency and comprehension. The students should work as much as possible and talk to each other to build conversation and to exchange information (Siregar, 2016). To improve the students' speaking ability the researchers used the mind mapping method. Buzan (2005: 4) suggests that mind maps are creative and effective ways to

record, easy ways to enter and release information in the brain, mind maps use colors, symbols, words, curved lines and images that are appropriate to the way the brain works.

Furthermore, Budd (2004) said mind map is an outline in which the major categories radiate from a central image and lesser categories are portrayed as branches of larger branches. And Jbeili (2013); Bystrova & Larionova (2015); Zega (2018) mentions mind mapping learning model is a learning model that uses a concept map accompanied by pictures and keywords of a material concept that can cover the whole material. Indeed, Buzan (2005) showed the steps below in how to arrange mind mapping are (1) take a piece of white paper and it is in a landscape position, (2) start by drawing a colored image in the center of the paper and write the key word with capital letters, (3) choose a color and draw the main themes of the mind mapping on the thick branches radiating out from the central image, (4) add other main themes branches around the map, (5) make thick and colorful branches spanning out from your mind map, (6) write basic ideas about the key word and still use the capital letters, (7) add an image to all the main branches to represent each key theme and also use images to visualize every important key word on your map, and (8) let your mind mapping be as imaginative as possible. Finally, Liu, Tong, & Yang (2018) argued in the use of mind mapping techniques in the learning process provides various advantages teaching and can improve logical thinking and innovative thinking.

The researcher conducted pre-researcher at grade X-2 TKJ of SMK N 1 Panyabungan, Mandailing Natal - Sumatera Utara. Based on speaking midterm test, it showed that most of the students were not able to speak on descriptive texts. From 44 students, only 10 students could speak and respond orally in descriptive texts, 5 students could speak and respond the text, and 29 students could not speak and responded the text orally. The fact was supported by the data from their speaking result in the midterm test; the data showed that 78% of students got speaking mark under Minimum Achievement Criteria (KKM).

Based on the data above, most or 78% of the students' speaking skill in midterm test was below the passing score for more than half of total number of the students in the class. Seeing from the first indicator which is vocabulary, there were 9 students or 28% of students reached MAC (KKM). The second indicator, grammar, shows that there were only 4 students or 12.5 % of students reached the passing score. The third indicator, pronunciation, expressed 11 students or 34.48 % of students could reach the passing score. Moreover, for fluency and comprehension, there were 4 students or 12.5 % of students and 8 students or 25 % of students could acquire the passing score respectively.

Based on the informal observation and experience, the researcher found that there were several problems that caused the students' low speaking skill in descriptive texts. The first, the

students got difficulties in comprehending the topic because they were not able to differentiate the part of the descriptive texts including language features, generic structures and social function. The second, they had lack ability in vocabulary mastery because the vocabulary found in the topic must be understood based on the context of the topic and the vocabularies were not more difficult from what they had memorized. The third, the students did many errors in grammatical use and it made them afraid of making mistakes while arranging the words to express the ideas or opinions.

The fourth, the students tended to keep silent and be a good listener in the class because they had bad pronunciation and ashamed to practice. These problems could be caused from the teacher's side, like the using of technique and media. The teacher used to distribute the text to the students without interesting media, and asked them to describe by their own sentences, then memorized it, after that they were asked to perform in front of the class. It made them boring to do the activity because no variation in teaching and learning process.

For these reasons, the researcher took responsibility to be creative and innovative in designing teaching and learning activities to explore students' ability in descriptive texts based in many kinds of texts in order to obtain instructional of events in words, images, and sounds often by improvisation. In other words, this research aims to find out that mind mapping improve The student`s speaking skills.

METHOD

This research was conducted at SMKN 1 Panyabungan which is laid on Jl. Sukaramai-Aek Galoga, Mandailing Natal regency- North Sumatera. Participants of this research were the students at grade X-2 TKJ of SMKN 1 Panyabungan. There were 44 students in the classroom. They consist of 24 females and 20 males. It was chosen because a great number of students in this class had low ability in speaking. They could not achieve the Minimum Achievement Criteria (KKM). The MAC of this class was 72. The method in this study was Classroom Action Research. According to Kemmis and McTaggart (1988) assert that action research is collaborative when the researcher works together with his colleague from the beginning until the end of the research activities. Furthermore, Wallace (1998), a Classroom Action Research is a research which focuses to facilitate the reflective cycle and this way provides an effective method for improving professional action.

In this research, the researcher implemented two cycle processes: cycle 1 and cycle 2. There were five meetings for each cycle with the allocation of time 2 x 45 minutes. As stated above, this research was consisted of two cycles; I and II. Every cycle had five meetings; four

meetings for the action, assignments, and one meeting for the test. The researcher did the research for 90 minutes each of meeting.

The researcher was used test, observation, field note and interview as techniques of collecting the data. Since the researcher wanted to know the process happened during her instruction using mind mapping for descriptive Texts, she was collected the data by collaborating with an observer or a collaborator. In collecting the data, the researcher used students' English performance through the students' spoken English skill through speaking test in each cycle. The teacher took the students' speaking mark at the end of each cycle in order to know the improvement of students' speaking skill. Next, the data was collected during the process of teaching and learning by using observation sheets (worksheets, activities, assessment). Here, she also collaborated with observer. Besides the collaborator, the researcher also made field notes.

After that, there was an interview between the researcher and the students. The students that had been interview are chosen based on the criteria of strong and low students. This was done to get information whether the technique applied works successfully to solve the problem faced by the students.

RESULT AND DISCUSSION

The result of this study obtained from the implementation of mind mapping on improving students' speaking skill of grade X-2 TKJ of SMK N 1 Panyabungan, Mandailing Natal - Sumatera Utara. The research was conducted into two cycles. It can be seen that the overall cycle shows blow:

a. First Cycle

It was previously clarified; mind mapping for speaking descriptive texts technique was implemented to solve the problems found in the teaching speaking skill. The first cycle is carried out with five meetings. It was done twice a week. In doing the research, the researcher was helped by the collaborator. The collaborator was fulfilled the observation sheet and field note during the research. The researcher could plan the activities to do for the research very well. The activities were orderly showed that creating mind mapping for speaking of descriptive texts. That was used to be taught to the students in teaching speaking Descriptive Texts.

The students were taught to learn to speak by looking at model provided from the teacher, and also from video. They learned how to pronounce the words and like model given. The researcher and the students discussed the model and tried to get the content from what being discussed. After the students understood the material being discussed, they had to create

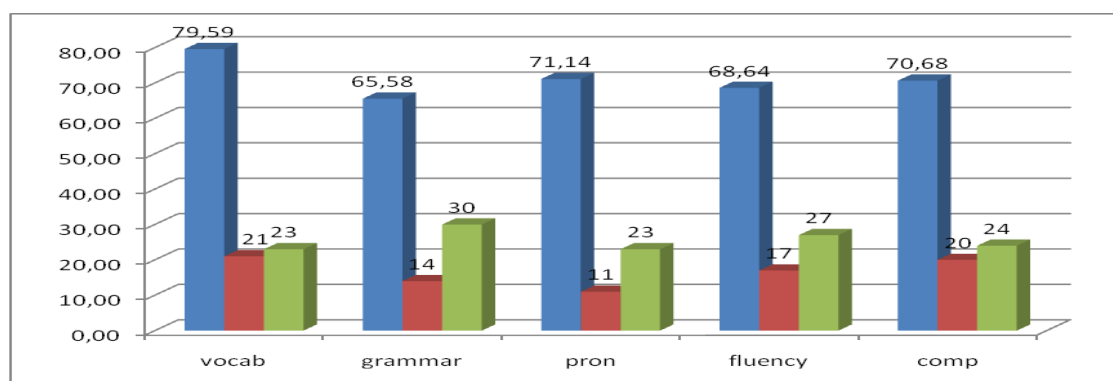
their own mind mapping for speaking Descriptive Texts, related to the topic being discussed in their group.

From the performance test, it was shown that, the students` class average score increased compared with midterm speaking test. The result midterm speaking test of vocabulary was 60.68, the grammar score was 56.59, the pronunciation was 57.27. The score of fluency was 57.72. The score of comprehension was 64.31. While the results of speaking test in cycle 1 became: the students` class average score of vocabulary was 79.59. The grammar score was 65.58, pronunciation score was 71.14, while fluency and comprehension term were 68.64 and 70.68.

By having the data from the speaking test result in cycle 1, the researcher and collaborator analyzed that there were some improvements of students` speaking skill on describing object in descriptive texts. The improvement could be seen from each indicators of the speaking skill. From the speaking test result in cycle 1 above, it was stated that there were 21 out of 44 students who could not reach MAC (KKM), or only could achieve 23 students the passing score 70. It means that 47.72% of students failed in the speaking test.

Seeing from the first indicator which is vocabulary there were 21 students or 47.72% of students could reach the MAC (KKM). The second indicator, grammar , shows that were 14 students or 31.81% of students could reach the MAC(KKM) while the third indicator , pronunciation , shows that there were 21 students or 47.71% of students obtained the MAC (KKM), and the fourth indicator, fluency , shows that there were 17 students or 38.63 of students could achieved the MAC (KKM). Moreover, for comprehension, there were 20 students or 45.45% of students could reach the MAC (KKM). The achievement of students` speaking skill referring to the indicators is illustrated in the following figure.

Figure 1. Students' Achievement of Speaking Test Based Indicators for Cycle 1



Information's in figure 1 above obviously describes the students` capability in passing the test per indicators was surprisingly satisfying compared with the midterm test or before conducting the research. It has been stated in the background above that the data in midterm test showed that 77.27% of students got speaking mark under MAC (KKM). While after

applying mind mapping in describing objects in cycle 1, it became only 52.27% of students failed in the speaking test. But, the next improvement was still needed.

The mean score of each indicator of students' speaking skill through speaking test at the end of the first cycle was as follows. The means score of vocabulary was 79.59. There were 21 or 47.72% of students got passing score. The means score of grammar was 65.58. It means, that there were 14 or 31.81% of students could reach MAC (KKM). The means score of pronunciation was 71.14. Here, there were 21 or 47.72% of students could obtain MAC (KKM). The means score of fluency was 68.64, there were 17 or 38.63% of students could reach MAC (KKM). The mean score of comprehension was 70.68. It means, there were 20 or 45.45% of students could obtain MAC (KKM).

Based on the observation, the researcher knew that why the indicator of grammar was the most difficult for them because the time allocated to explain it was too limited and the students' knowledge about grammar was too low. The researcher did not give more practice for grammar. From observation sheet of speaking, in term of pronunciation, even though the students' accent were still influenced by their mother tongue, some of students pronounced the words as it and their words were getting clearer than when the midterm test were held. Furthermore, the repetition slowly disappeared as they became more certain of the correct pronunciation.

The figure 1 also showed that each element of speaking skill of students had improved, but some students still had low ability. Almost all students made improvement on each indicator, meanwhile some weaknesses were still found on grammar, fluency, comprehension, and pronunciation component because there were about four students who got poor mark on this competency.

Although most of students or 77.27% had done improvement on their speaking skills from the previous meetings, the result was not satisfied enough because the students just did a little change on their speaking components per each indicator. So, it was needed for the researcher to continue to the next cycle.

b. Second Cycle

The second cycle was also conducted in five meetings. Each meeting took 90 minutes to do. In this cycle, the students were given other kinds of describing topic in descriptive texts. For the first meeting that was used in teaching speaking of descriptive texts were using video of "describing things" and "places".

After preparing texts, the researcher also prepared the revised plan based on the reflection in cycle 1 before. The researcher expected that the revised plan would make students'

speaking skill on descriptive texts could be better improved. The revised plan was made by the researcher based on the reflection both by the researcher and the collaborator. This revised plan focused more on problems and weaknesses found in the previous cycle that needed to be solved in this cycle. The revised plan consists of: 1) Redesigning the lesson plan which included activities and steps that should be done both by the researcher and the students in improving speaking descriptive texts through mind mapping, 2) Preparing a new story to create mind mapping in speaking descriptive texts. The activities in the second cycle were quite similar with the first cycle, but there were some different emphasizing due to revised plan to overcome the certain problems which were unsolved in the first cycle.

After they had understood from the material given, the researcher showed the topic description through the short video. The researcher turned up the video as brainstorming to make them easy to understand the description given. It was done to overcome the problems occurred in the first cycle which showed that most of the students faced difficulty in understanding the utterances because the native speaker spoke very fast. Because of that the researcher did this way to make the students were usual in listening material. Through this way, they could figure out any words that they heard from the teacher and video. Besides that, they had to keep concentrate when they heard a long utterance or a sentence in the topic description to help them to create mind mapping for descriptive texts and to perform it better.

After conducting the stages in the second cycle, the researcher described the data as follows: mean score of each indicator of students' speaking skill through speaking at the end of the second cycle was 80.45. There were 38 (86.36%) students could achieve MAC (KKM), while 6 (13.63%) students from 44 could not. The mean score of each indicator of students' speaking skill through speaking test at the end of the second cycle was as follows. The means score of vocabulary was 83.13. There were 33 or 75.00% of students reached passing score. The means score of second indicator (grammar) was 74.55. It shows that, that there were 26 or 59.09% of students could reach MAC (KKM). The means score of pronunciation was 82.05. Seeing from the indicator, here, there were 31 students or 70.45% of students reached passing score. The means score of fluency was 82.27. There were 33 students or 75.00% of students obtained passing score. The mean score of comprehension was 85.02. It means, there were 37 or 84.09% of students could obtain passing score.

From cycle 1 to cycle 2, there was the improvement of students' speaking skill that were reached by the students by using mind mapping for describing object in descriptive texts. Obviously the researcher found the students' speaking skill was better improved. The achievement of students' speaking skill referring to the indicators is illustrated in the following diagram.

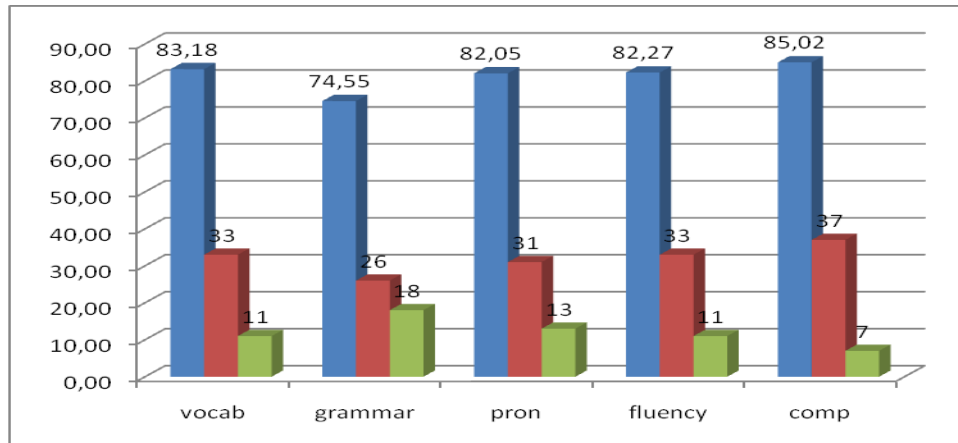
Figure 2. Students' Achievement of Speaking Test Based Indicators for Cycle 2

Figure 2 above surely describes that the student's capability in passing the test per indicators was surprisingly satisfying from the speaking midterm test and cycle 1. The data gained in cycle 2 proved that there was an improvement in students' speaking skill in descriptive texts if we compared with the test result in cycle 1.

Mind mapping is used by teachers as a benchmark for assessment in the learning process in line with some reserchers conducted. First (Resi & Wulan, 2018) based on the results of the partial test (t test) the calculated value (19.541) is greater than the t-table value (1.670) so that it can be concluded that the mind mapping learning model variable increased and influenced the speaking ability variable students in the public speaking. Next (Darmuk, Hariyadi, and Hidayati, 2019) on their research, improvement of learning in cycle 1 and cycle 2 by distributing questionnaires to explain students' interest in learning to speak using the mind map method, it can be seen that Student interest in participating in learning increased. increased learning to speak in cycle 1 by 60% (18%) people and at the level of cycle 2 increased to 96.7% people (29 people). Then, (Nisa & Rezkita, 2020) mind map method improved students' creativity of 3G class on the course of Integrated Natural Science Education of Elementary school. This is proved by the percentage improvement of cycle 1 by 68.53% (good) to 87.64 (very good) in cycle 2, so students can have good creativity and learning outcomes.

Furthermore (Hidayat, Mulyani, and Sholihat, 2020) based on their research when learning PKN using the mind mapping method of student creativity had increased from 25 students 48% of 12 students declared sufficient, then 16% of 4 students declared less, and 36% of 9 people stated less. after mind mapping applied student creativity increased by 40% of the 10 students declared good, then 60% of the 15 students declared sufficient and there were no more students who scored below the KKM of the total number of students 25 people. Moreover, (Panggabean et al., 2019) have concluded that mind mapping giving an effect for students when learning descriptive text.

Based on research from several researchers who are the same as this research that mind mapping can improve learning outcomes including speaking skills. According Tony Buzan, As stated i mind mapping is an extremely effective method.

CONCLUSION

The result of this action research shows that the improvement of student`s speaking skills through mind mapping. The improvement of student`s speaking skill through mind mapping could be seen in the increasing of test for the second cycle of the research in which the students` scores were increased became 83.13 for vocabulary, 72.19 for grammar, for pronunciation, 83.13 for fluency and 81.56 for comprehension. So, the student`s speaking skills in descriptive text through mind mapping improved. The effects of the teaching learning process could be indicated by; they were more active in following the lesson, most of the students were not ashamed to give opinion, students less noisy so, they could focus more on the lesson and could be actively follow teacher`s instruction .

From the statement above, it can be concluded that teaching descriptive text through mind mapping is able to improve the students speaking skills. And the teaching learning process of using mind mapping give good effect to students.

REFERENCES

- Bahadorfar, M., & Omidvar, R. (2014). Technology in teaching speaking skill. *Acme International Journal of Multidisciplinary Research*, 2(4), 9-13.
- Brown, H. Douglas. (1980). *Principles of Language Learning and Teaching*. New Jersey: Prentice Hall, Inc.
- Brown, H. Douglas. (2001). *Teaching by Principles: An Interactive Approach to Language Pedagogy (2nd ed.)*. New York: Addison Wesley Longman, Inc.
- Brown, H. Douglas. (2008). *Language Assessment*. San Francisco: Longman.
- Budd, J. W. (2004). Mind maps as classroom exercises. *Journal of Economic Education*, 35(1), 35-46.
- Burns, A and Joyce, H. (1997). *Focus on Speaking*. Sydney: National Center for English Language Teaching and Research.
- Buzan, T. (2004). *Mind Map Untuk Meningkatkan Kreativitas*. Jakarta: Gramedia Pustaka Utama.
- Buzan, T. (2005). *The Ultimate Book of Mind Maps*. United States: HarperCollins Publishers Inc.

- Buzan, T., (Alih Bahasa oleh Susi Purwoko). (2007). *Buku Pintar Mind Map untuk Anak: Agar Anak Jadi Pintar di Sekolah*. Jakarta: Gramedia.
- Buzan, T., (Alih Bahasa oleh Susi Purwoko). (2008). *Buku Pintar Mind Map*. Jakarta: Gramedia.
- Buzan, T. (2009). *Buku Pintar Mind Mapping*. Jakarta: Gramedia Pustaka Utama
- Buzan, T. (2010). *Mind Mapping: Scientific Research and Studies*. New York: Thing Buzan ltd.
- Bystrova, T., & Larionova, V. (2015). Use of Virtual Mind Mapping to Effectively Organise the Project Activities of Students at the University. *Procedia-Social and Behavioral Sciences*, 214, 465–472. <https://doi.org/10.1016/j.sbspro.2015.11.724>
- Jbeili, I. M. A. (2013). The Impact of Digital Mind maps on Science Achievement among Sixth Grade Students in Saudi Arabia. *Procedia-Social and Behavioral Sciences*, 103, 1078–1087. <https://doi.org/10.1016/j.sbspro.2013.10.435>
- Kemmis, S., & McTaggart, R. (1988). *The action research planner*. Gee Long: Deakin University Press.
- Liu, Y., Tong, Y., & Yang, Y. (2018). The Application of Mind Mapping into College Computer Programming Teaching. *Procedia Computer Science*, 129, 66–70. <https://doi.org/10.1016/j.procs.2018.03.047>
- Maharani, S. (2016). The Use of Puppets: Shifting Speaking Skill from the Perspective of Students' Self-Esteem. *Register Journal, Language & Language Teaching Journals*, 9(101–126).
- McDonough, K. (2004). Learner-learner interaction during pair and small group activities in a Thai EFL context. *System*, 32(2), 207–224. doi:10.1016/j.system.2004.01.003
- Nunan, D. (1991). Communicative Task and the Language Curriculum. *ESOL Quarterly*, 25(2), 279–295.
- Nunan, D. (2003). *Practical English Language Teaching*. Boston: McGraw Hill.
- Panggabean, W. S., Lubis, F., & Lubis, R. F. (2019). Mind Mapping on Students' Writing Descriptive Text. *English Education: English Journal for Teaching and Learning*, 07(02), 164–174. <https://doi.org/https://doi.org/10.24952/ee.v7i02.2233>
- Richards, Jack C. and Willy A. Renandya. (2001). *Methodology in Language Teaching An Anthology of Current Practice*, Cambridge: Cambridge University Press.
- Siregar, S. R. (2016). Using Direct Method in Teaching Speaking. *English Education: English Journal for Teaching and Learning*, 4(02), 34–48. <http://194.31.53.129/index.php/EEJ/article/view/1294>.

- Siregar, S. R. (2017). Interactive Drama Technique to Improve Students' Speaking Skill. *English Education: English Journal for Teaching and Learning*, 5(2), 67-78. <http://jurnal.iain-padangsidempuan.ac.id/index.php/EEJ/article/view/1181>.
- Sholah, Hanif Maulaniam. (2013). The Effectiveness of Mind Mapping on Students Writing Skill Across Different Learning Motivation, 1-13. <https://zdoc.pub/the-use-of-mindmapping-technique-to-improve-the-students-wr.html>
- Spratt, M., Pulverness, A., & Williams, M. (2005). *The TKT (Teaching Knowledge Test) course*. Cambridge: Cambridge University Press.
- Tony Buzan. (2005). *Buku Pintar Mind Map*. Jakarta: PT Gramedia Pustaka Utama.
- Wallace, Michael. J. (1998). *Action Research for Language Teachers*. Cambridge: Cambridge University Press.
- Winch, Gordon. (2005). *Growing up with Grammar*. Sydney: New Frontier Publishing.
- Yashima, T. (2002). Willingness to communicate in a second language: The Japanese EFL context. *The Modern Language Journal*, 86, 54-66. doi:10.1111/1540-4781.00136.
- Zega, U. (2018). Pengaruh Model Pembelajaran Mind Mapping Terhadap Hasil Belajar Siswa Kelas Viii Pada Mata Pelajaran Ipa Biologidi Smp Negeri 2 Amandraya Tahun Pembelajaran 2017/2018. *Jurnal Education and Development Institut*, 4(1), 79-85.
- Zhong Sun, Chin-Hsi Lin, Jiaxin You, Hai jiao Shen, S. Q. & L. L. (2017). Improving the English-speaking skills of young learners through mobile social networking. *Journal Computer Assisted Language Learning*, 30:3-4, 304-324. DOI: 10.1080/09588221.2017.1308384.