

THE EFFECT OF MNEMONIC LOCI TECHNIQUE ON STUDENTS' VOCABULARY MEMORIZATION

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Abstract

This current study reports the effect of mnemonic loci technique on students' vocabulary memorization. Being designed in quasi-experimental, the study answered these two questions: (1) Is there any significant difference in short-term retention of vocabulary items between the students of the mnemonic loci technique and the students of the repetition technique?, and (2) Is there any significant difference in long-term retention of vocabulary items between the students of the mnemonic loci technique and students of the repetition technique? The samples were 50 students taken from two classes, i.e. class XI of Social Science (27 students in experimental group) and class XI of Natural Science (23 students in control group). Two posttests were administered to obtain the posttest data which were analyzed using Independent T-test. The immediate posttest revealed that the t-observed was 1.134. This t-observed had the Sig. (2-tailed) of .262 which was much higher than .05. Since the Sig. (2-tailed) was much higher than .05, it led to the conclusion that both groups showed the same performance. Further, the delayed posttest revealed that the t-observed was 2.551. This t-observed had the Sig. (2-tailed) of .014. Since the Sig. (2-tailed) was below .05, the experimental group outperformed the control group.

Keywords: mnemonic loci technique, repetition technique, learning of vocabulary, short-term retention (STR), long-term retention (LTR), short-term memory (STM), long-term memory (LTM).

INTRODUCTION

The investigation on the effectiveness of Mnemonic on vocabulary retention has been recently conducted broadly around the world. Two recent countries are Iran (Safa & Hamzavi, 2013) and Turkey (Koksal, Sunbul, Ozturk et al., 2013), It is agreed that learning of vocabulary is one critical aspect of learning foreign language. It is

considered that vocabulary is a critical tool of language learning (Alqahtani, 2015). It is impossible for someone to speak or produce utterances, or read and write passages without knowing its words. EFL learners will be incapable of producing utterances, reading texts, or writing passages of a foreign language if they have no sufficient vocabulary items. The limited vocabulary items of a foreign language will inhibit the communication. Without correct grammar, one's utterance will be little to be understood, but with no vocabulary, there is nothing to be understood (Rasouli & Jafari, 2016). EFL learners need vocabulary items to facilitate expressing what they really intend to express in any language.

Vocabulary is critically required for activities both indoor and outdoor classroom activities. In indoor classroom activities, vocabulary is required in the 4 language competences, i.e. speaking, writing, reading, and listening, since it is a core element of language proficiency. In addition, vocabulary also provides strong basis for a good 4 skills (Richards & Renandya, 2002). Learners will be incapable of interacting with each other in English without having adequate vocabulary items. They will also be incapable of understanding or writing passages without having sufficient vocabulary items in mind. In most cases, students think of listening, speaking, reading, and writing activities are very exhausting since they tend to use the same words and expressions all over the time and ultimately, the activities are interrupted. The main reason underlying this problem is the lack of vocabulary items. Other students are having problem with forgetting the words a minute after they discover the words meaning in the dictionary and this is also a cause of the lack of vocabulary which will finally inhibit the communication and the successful utilize of a foreign language.

In outdoor classroom activities, when students are traveling, instead of bringing grammar book, they tend to bring dictionary, either electronic or conventional dictionary, to help them finding vocabulary items that they want to use

during interaction and communication (Schmitt, 2010). They realize that with limited vocabulary, the communication will be impeded. Without grammar, they are still able to communicate, but with no vocabulary, they will produce nothing. In other words, adequate vocabulary size is required for the successful make use of a foreign language since without extensive vocabulary items, it is impossible for students to use the structures or functions to establish comprehensible interaction. Further, in order to have communicative competence and acquire foreign language, EFL learners should also have sufficient vocabulary knowledge (Schmitt, 2000). In addition to contributing to the understanding and production of foreign language, the vocabulary knowledge will also serve as a good meter of the acquisition of foreign language skills (Viera, 2017).

In order to have adequate vocabulary items and ultimately succeed in learning foreign language, EFL learners should also utilize learning strategies of foreign language. The strategy of language learning is the mindful behaviors performed by learners in order to be able to boost their learning (Asgari & Bin Mustapha, 2011; Oxford, 2017; Thornbury, 2006). Learning strategies can also refer to specific or any action that the learner performs to facilitate and fasten the learning process that will lead to more joyful and effective process or situation (Oxford, 1990). These strategies will help learner to boost the acquisition, retention, recall, and also use of fresh information. I would like to define learning strategies in my own definition as actions performed by learners in order to be able to accomplish various tasks in the learning process using different types of tactics in order to be successful in the use of a foreign language. Strategies are important for EFL learning since they are tools for active and self-directed involvement which is critically important for developing communicative competence (Oxford, 1990). The use of appropriate language learning strategies will

improve proficiency and provide better self-confidence for the development of communicative competence.

Many language learning strategies can be used to stimulate the growth of communicative competence, i.e. Metacognitive strategies, Affective strategies, Social strategies, Cognitive strategies, Memory strategies, and Compensation strategies (Oxford, 1990). Metacognitive strategies deal with organizing EFL learners' cognition and helping them to stay focus, plan, and evaluate their progress toward communicative competence. Affective strategies handle attitudes or emotions (Cohen, 2002). These strategies will develop learners' self-confidence by actively involving themselves in language learning. Social strategies will increase learners' interaction with other learners and provide more empathetic understanding during the learning process. Cognitive strategies are used to analyze and classify new information, in addition to linking new information with existing schemata (O'Malley & Chamot, 1990). Memory strategies are useful for inputting new information into learners' memory and retrieving it when required. Compensation strategies involve actions performed by learners to overcome and negotiate gaps and deficiencies such as guessing and using gestures in order to be able to communicate authentically. The choice of language learning strategies can be influenced by age, career, sex, orientation, gender, attitude, aptitude and motivation, and the purposes of the learning (Nikoopour, Salimian, Salimian et al., 2012). Most successful learners prefer to use the most appropriate learning strategies to the task, material, goals, needs, and stage of learning they have.

The ability of retaining and recalling extensive vocabulary items of foreign language have been the most important and required aspect of learning foreign language especially for learners in EFL context (Alqahtani, 2015). In the effort of enhancing learners' ability in retaining and recalling new words, teacher should teach

and implement vocabulary learning strategy. Those strategies are expected to be able to help learners to find, retain, and call to mind the meaning of the new vocabulary they have just learned along with consolidating it. The strategies will also be required when learners have to perform independent learning (Amiryousefi & Ketabi, 2011). Thus, in addition to chose the language learning strategies, EFL learners should also make the best choice of vocabulary learning strategies, i.e., (1) Metacognitive strategies, (2) Cognitive strategies, (3) Memory strategies, and (4) Activation strategies (Gu & Johnson, 1996). In Metacognitive strategies, it is mandatory for the learners to perform "selection-attention" strategies and "self-initiation" during learning. Those who are able to actively perform selection-attention strategies will recognize and realize the crucial words they have to find out the meaning and which words are vital for them to comprehend the passage. Further, those who perform self-initiation strategies will be able to use variety of means in order to make clear the meaning of vocabulary items.

Cognitive strategies involve guessing the meaning of targeted word, ability to utilize dictionaries, and note-taking activities. Learners who are able to use guessing strategies will be able to utilize their schemata and linguistic signs such as grammars or structures used in a sentence in guessing the meaning of a word. Encoding and rehearsal are categorized as Memory strategies. Encoding includes association, visual, imagery mnemonic, semantic, and auditory (Goundar, 2015; Lawson & Hogben, 1996). Rehearsal includes making word lists and repetition activities. The last strategies are Activation strategies. These strategies require EFL learners to actually use new words they have just learned in different contexts such as making various sentences using those new words (Ghazal, 2007).

Since storing and recalling new words of foreign language, in massive, into learner's memory are very required and challenging, many EFL teachers and

researchers are trying to find out the most effective technique to overcome the challenge. One alternative technique that is considered to be able to boost vocabulary memory is Mnemonics. Mnemonics are techniques of enhancing memory that are not widely used in education (Putnam, 2015). Other experts define Mnemonics as specific techniques which can be used to help EFL learners memorize lists of words, either verbal or visual devices or techniques (Sternberg & Stenberg, 2012). These techniques make it easier for EFL learners to memorize vocabulary items, retain them in short-term retention (STR) or long-term retention (LTR), and retrieve them when required (Ellis, 1995). Mnemonic Loci Technique is a vocabulary learning technique in which the new words are successively associated with familiar locations of the learners, by involving visual imagery or mental pictures (Lindenberger, Kliegl, & Baltes, 1992). When it is time for learners to recall the words, they simply need to mentally imagine the location. The main point of the loci technique is the recall of mental pictures that connects the vocabulary items that must be remembered in the order in which they are placed in the imagined location. At the recall stage, one simply needs to revisit the imagined location in sequence, regain the related mental pictures, and convert those mental pictures into the words that must be remembered; that's why, Loci Technique bears the title of Memory Palace (Legge, Madan, Ng et al., 2012).

Many researchers had conducted research on the effectiveness of Mnemonics in enhancing learners' vocabulary memorization and recall. Safa and Hamzavi (2013) prove the effectiveness of MKM in facilitating the vocabulary retention. He selected fifty students of 5th grade primary school in Javanrood, Iran and randomly assigned them into two different groups; experimental group and control group. The Mnemonic Key Word Method was implemented in the experimental group. The same vocabulary items were also given to the control group using classic memorization-

based instruction. Three posttests were given to the two groups; 1 day, 2 weeks, and 1 month after the end of the treatment. His research revealed that the students in the experimental group, with the Mnemonic Key Word Method implemented, performed better than those who were in the control group in term of vocabulary memorization and long-term retention. It means that the Mnemonic Keyword Method (MKM) was an efficient technique of vocabulary instruction since the learners were able to retain vocabulary items longer in the EFL classroom context.

Marzban and Amoli (2012) also investigated the effectiveness of utilizing Mnemonic for retrieving vocabulary items, either immediate or delayed retrieval. Seventy male and female freshmen from Aviation University of Tehran were involved as the participants. To make sure that the students were really unfamiliar with the new words, they administered a vocabulary pretest. Those seventy students were then assigned into experimental group and control group with 35 students in each group. The two strategies of vocabulary mnemonic, visualization and pictures, were implemented to the experimental group students while the control group was given with no strategy. After completing the treatment and after two weeks of the treatment, researcher administered a multiple-choice vocabulary posttest. From the data analysis of the posttest 1 and 2, it was revealed that the students of the experimental group were superior to those who were in the control group. In the other words, the research proved the effectiveness of Mnemonics in helping EFL learners to memorize, retain, and recall vocabulary items.

Koksal, Sunbul, Ozturk et al. (2013) performed investigation to find out the efffec of implementing Mnemonic for obtaining and recalling knowledges. The research was intended to find out the impact of two Mnemonic Devices, i.e, letter and phonetic technique in term of attainment and recall of knowledge about health teams, healthcare system, and the nurses roles as they learned from "Introduction to

Nursing” lesson. Seventy-six students taken from two intact classes in the Department of Nursing at the Faculty of Health Sciences of Kafkas University were involved as participant. One class consisting of 39 students was assigned into the treatment group, while another class consisting of 37 students was assigned into the control group. The students in the treatment group were taught using letter and phonetic technique, while those who are in control group were taught using classical technique. Researchers arranged the attainment test and the recall test 3 weeks after the treatment. The statistical calculation of t-test was performed to analyze the obtained scores. The calculation result revealed that the difference of the score in term of the attainment and the recall of the two groups were significant. The students who were taught using letter and phonetic technique performed better than those who were taught using classical technique. It showed that the Mnemonic devices, letter and phonetic techniques, were more effective than traditional technique. Once again, the effectiveness of Mnemonics in enhancing learners’ vocabulary memorization, retention, and recall was proved.

Anjomafrouz and Tajalli (2012) investigated the effectiveness of Mnemonic for recalling the vocabulary items. Their research was intended to find out the effect of mnemonic associations technique on vocabulary recall, compared with rote technique. The participants were Iranian EFL learners of adults and adolescents who were distributed into 2 experimental groups and 2 control groups. The researcher gave the two experimental groups with new vocabulary items and they were required to memorize those vocabulary items using mnemonic associations. The other two groups, control groups, were instructed to memorize the same new vocabulary items using repetition and memorization. The researchers wanted to investigate the effectiveness of mnemonic associations technique compared with rote technique on recalling vocabulary items of the participants. They also wanted to know, whether or

not, age also influenced the effectiveness of mnemonic associations technique on recalling vocabulary items of the participants over time. In the end of the experiment, the participants of experimental and control groups were tested using four tasks of recall. The data analysis proved that mnemonic associations of adult participants resulted in highly better performance compared with those who were in external control group with rote technique (repetition and memorization). In addition, the two experimental groups of adolescent and adult participants achieved significantly better performance in comparison with internal control group with rote technique implemented. In short, the research provided evidence of the effectiveness of mnemonic associations in retaining new vocabulary items along with recalling them from time to time.

Many EFL teachers and researchers are trying to find out the best way to encourage EFL learners to learn more new words, and the Mnemonic Loci Technique could be the answer. Mnemonics, also known as Mnemonic devices, are "mental aids" or "mental technique" that are useful for assisting learners to remember particular information or items such as numbers, name, historical date, new word forms, formula, and various rules and lists (Fasih, Izadpanah, & Shahnava, 2018). Those mental aids can be utilized to improve learners' memory by encoding new information they recently acquire and associate it with previous information they have already had in long-term memory (Zimbardo, Johnson, & McCann, 2012). Lindenberger et al., (1992) provide definition of loci technique as a technique of connecting new words with locations using visual imagery. When the time comes for recalling the words, the only thing to do is reimagining the locations.

The previous studies mentioned above prove well the effectiveness of Mnemonic on vocabulary memorization, but none of the above studies investigated the effectiveness of Mnemonic Loci on vocabulary memorization, especially in

pedagogic, whereas Mnemonic Loci is believed to be a powerful technique of enhancing memory but it is rarely used in pedagogic (Putnam, 2015:131). Referring to the gap, a study on the effectiveness of Mnemonic Loci in pedagogical context has to be conducted in term of vocabulary memorization. Therefore, the researcher wants to conduct the research on The Effect of Mnemonic Loci Technique on Students' Vocabulary Memorization in the context of Indonesian EFL learners.

METHOD

This research used quasi-experimental design with 2 available classes provided by the headmaster. Lottery was used to assign both classes into two groups. One class was "experimental group" and another one was "control group". The experimental group was required to memorize vocabulary items using the Mnemonic Loci Technique and the control group was required to memorize vocabulary items using the repetition technique.

The following procedures were taken during this research: (1) checking the initial vocabulary competence of the two classes, (2) applying the experimental treatment, and (3) administering two sets of posttests for the two groups. Checking the initial competence of the two classes was intended to check whether or not the initial vocabulary competence before treatment of the two classes was equal. Twenty-five Multiple-Choice Questions taken from KET (Key English Test) were used during this procedure. The data of the two classes obtained from this initial competence test were compared using "Independent Sample T-test" to check whether or not the two classes had the equal initial vocabulary competence before treatment. The result can be seen in the following table.

Table 1 - Independent Sample T-Test of Initial Competence Test

Group Statistics						
	Class	N	Mean	Std. Deviation	t	Sig. (2-tailed)
Score	Social Science	27	59.70	7.839	1.667	.102
	Natural Science	23	56.00	7.816		

As shown in Table 1, it is revealed that the Sig. (2-tailed) is .102 which is much higher than .05 (.102 > .05). Thus, it can be concluded that the two classes had the same initial vocabulary competence before treatment.

Following this procedure, the researcher randomly assigned the 2 classes into 2 groups, i.e. experimental group and control group using lottery. The treatment covered giving the experimental treatment to the students of the experimental group using Mnemonic Loci Technique in memorizing vocabulary items. Besides, those who were in the control group were demanded to memorize the vocabulary items using the repetition technique. The posttest was then administered after the treatment to the 2 groups. The mean values of the two groups obtained from the posttest were compared to check whether or not the students of the "Experimental Group" outperformed the students of the "Control Group", in term of STR (short-term retention) and LTR (long-term retention) of the memorized vocabulary.

Sample

The samples were the students of SMA Bahrul Maghfiroh Malang at grade XI from 2 classes, i.e. class XI of Social Science consisting of 27 students and class XI of Natural Science consisting of 23 students. The researcher had checked the initial vocabulary competence of the two classes using KET (Key English Test) with twenty-five Multiple-Choice Questions. It was proved that the two classes had the same initial vocabulary competence before treatment as shown in Table 1 above. He, then, used

lottery in assigning those 2 classes into two different groups, i.e. the experimental group and the control group. This lottery technique was used to avoid the tendency of the researcher in assigning the two classes into two groups, i.e. "experimental group" and "control group". The lottery resulted that the class XI of Natural Science was assigned to the experimental group and the class XI of Social Science was assigned to the control group.

Research Instrument

The researcher used multiple choice tests as the research instrument to collect the data about the students' vocabulary memorization either for STR and LTR. There were 25 items in the form of Multiple-Choice questions. When the students answered a question or an item correctly, they got 4 points, but if their answer was wrong for an item, 0 point was given. Thus, the students got a score of 100 if they were able to answer the twenty-five questions correctly. This test lasted for 60 minutes according to the time allocation provided by the school.

Data Collection

The researcher used test in the form of MCQs to collect data from two posttests, i.e. immediate posttest and delayed posttest. The immediate posttest was held immediately after the last session of the treatment, while the delayed posttest was held two weeks after the last session of the treatment. The test consisted of 25 Multiple-Choice questions. When the students answered a question or an item correctly, they got 4 points, but if their answer was wrong for an item, 0 point was given. Thus, the students got a score of 100 if they were able to answer the twenty-five questions correctly. This test lasted for 60 minutes according to the time allocation provided by the school.

RESULTS

Independent T-Test Result for the Immediate Posttest

The first posttest (also known as immediate posttest) was held immediately after the last session of the treatment on the 6th meeting. This test aimed to prove whether or not the difference is significant. The data collected from the two groups of this first posttest were calculated using the independent sample t-test using SPSS 25. The results are shown in the following table.

Table 2 - Group Statistics Output of the Immediate Posttest

Group Statistics						Mean Difference
	Group	N	Mean	SD	SED	
Score	Experimenta l Group	23	72.70	6.226	1.298	2.029
	Control Group	27	70.67	6.373	1.226	

Referring to the table above, we can see the number of the students in each group is 23 and 27 students. Also, it is found that the the Mean of both groups is 72.70 and 70.67. At glance, it can be said that there is difference performance in the immediate posttest between of the two groups. In order to prove whether or not the difference is significant, we need to further look at the following "Independent Samples Test" output table as indicated in Table below.

Table 3 - Independent Samples Test of the Immediate Posttest

Independent Samples Test						
		Levene's Test for Equality of Variances		t-test for Equality of Means		
		F	Sig.	t	df	Sig. (2-tailed)
Score	Equal variances assumed	.001	.978	1.134	48	.262
	Equal variances not assumed			1.136	47.069	.262

The following hypotheses are used for this immediate posttest.

H₀: The students of the mnemonic loci technique have the same performance as the students of the repetition technique in term of STM.

H_a: The students of the mnemonic loci technique outperform those who use the repetition technique in in term of STM.

Table 3 reveals that the Sig. value of "Levene's Test for Equality of Variances" is .978 which is higher than .05 (.978 > .05). That is, the variance of data between the the 2 groups is **homogeneous**. Since the homogeneity of variance is confirmed, the interpretation of the Independent Samples Test output table should refer to the t-observed stated in the "Equal variances assumed" column. The comparison of the Mean of the two groups using Independent Samples T-test reveals that the t-observed is 1.134. This t-observed has the Sig. (2-tailed) of .262. Since the Sig. (2-tailed) is much higher than .05 (.262 > .05), the H₀ is accepted and H_a is rejected. It can be drawn for the conclusion that the students of the mnemonic loci technique (the experimental group) have the same performance as the students of the repetition

technique (the control group) in terms of short-term retention of the memorized vocabulary items.

Independent T-Test Result for the Delayed Posttest

The second posttest (also known as delayed posttest) was held 2 weeks after the last session of the treatment. This test aimed to prove whether or not the difference of the two groups is significant in term of LTR. The data collected from the two groups of this delayed posttest were calculated using the independent sample t-test using SPSS 25. The results are shown in the following table.

Table 4 - Group Statistics Output of the Delayed Posttest

Group Statistics						
Group		N	Mean	SD	SED	Mean Difference
Score	Experimenta l Group	23	70.96	6.951	1.449	4.438
	Control Group	27	66.52	5.338	1.027	

Referring to the table above, we can see the number of students in each group is 23 students and 27 students. Also, it is found that the the Mean of both groups is 70.96 and 66.52. At glance, it can be said that there is difference performance in the delayed posttest between of the two groups. To prove whether or not the difference is significant, we need to further look at the following "Independent Samples Test" output table as shown in Table 5 below.

Table 5 - Independent Samples Test of the Delayed Posttest

		Independent Samples Test				
		Levene's Test				
		for Equality of Variances				
		t-test for Equality of Means				
		F	Sig.	t	df	Sig. (2-tailed)
Score	Equal variances assumed	2.881	.096	2.551	48	.014
	Equal variances not assumed			2.498	40.917	.017

The following hypotheses are used for this delayed posttest.

H₀: The students of the mnemonic loci technique have the same performance as the students of the repetition technique in in term of LTM.

H_a: The students of the mnemonic loci technique outperform those who use the repetition technique in in term of LTM.

Table 5 reveals that the significance value of Levene's Test for Equality of Variances is .096 which means it is above .05 (.096 > .05). That is, the variance of data between the experimental group and the control group is **homogeneous**. Since the homogeneity of variance is confirmed, the interpretation of the Independent Samples Test output table should refer to the t-observed stated in the "Equal variances assumed" column. The comparison of the Mean of the two groups using Independent Sample T-test reveals that the t-observed is 2.551. This t-observed has the Sig. (2-tailed) of .014. Since the Sig. (2-tailed) is lower than .05 (.014 < .05), the H₀ is rejected and H_a is accepted. It can be drawn for the conclusion that the students of the

mnemonic loci technique (the experimental group) have better performance in comparison to those treated with the repetition technique (the control group) in terms of long-term retention of the memorized vocabulary items.

DISCUSSION

It is undeniable that there is a connection between vocabulary learning and the process of foreign or second language learning. The positive impacts of vocabulary knowledge on the foreign language production of the learners are also unquestionable. Since learning the foreign or second language requires learners to learn its vocabulary items, they need to have the ability of retaining and recalling those vocabulary items. The abilities of retaining extensive vocabulary items of a foreign language either for short-term and long-term retention followed by recalling them when needed have been the most important and required aspect of learning foreign languages since they support the successful use of the foreign language (Alqahtani, 2015). Learners need to have robust retention of vocabulary item either in to be able to recall memory successfully. In an effort of finding an effective way to facilitate students in retaining and recalling the memorized vocabulary items, the researcher investigated the effects of the mnemonics loci technique on the student's vocabulary memorization and comparing it with the repetition technique.

In an effort of answering question number 1, i.e. Is there any significant difference in short-term retention of vocabulary items between the students of the mnemonic loci technique and the students of the repetition technique?, the immediate posttest was conducted. The result of this posttest indicated that the 2 groups had the same performance in short-term retention of vocabulary items. Short-term retention (STR) is closely related to short-term memory (STM). It refers to the capacity and the ability to store (without rehearsal) pieces of information in the mind in a short time period. Short-term memory includes all memories ranging from 15

seconds to several hours without rehearsal, which starts at the beginning of the information input process (Glassman & Hadad, 2009). All memories above the time range are stored in long-term memory. Referring to the argumentation proposed by Glassman and Hadad, the underlying reason for the finding in the first posttest is that the test is held immediately after the treatment. That is, the test is still covered in the time frame for short-term retention. Thus, in this posttest, the students of the two groups still have fresh memory of the vocabulary items they have memorized during the treatment.

A different finding was revealed in the second posttest with the aims of knowing the students' vocabulary memorization in terms of long-term retention and answering the research question number 2, i.e. Is there any significant difference in long-term retention of vocabulary items between students of the mnemonic loci technique and students of the repetition technique? The finding proved that the experimental group performed better than the control group in term of long-term retention of vocabulary items. One of the reasons behind this different finding is that the test is held beyond the range of short-term memory (beyond 15 seconds to several hours). In this case, the students of the two groups rely heavily on their long-term memory of the previously memorized vocabulary items during the treatment. In addition, the absence of a process of re-inputting vocabulary items into short-term memory further triggers the gone of vocabularies in the memory of the students of the control group. As a result, during second posttest held two weeks after the last session of the treatment, those students experience difficulty in recalling the vocabulary items that they have memorized during the treatment.

One of the advantages of the repetition technique is the ease of use. It cannot be denied that the repetition technique does not require special preparation or tools. The students can practice by themselves and simply need to repeat the vocabulary

items that are being memorized, over and over again. The problem arises when it is time to retain the memorized vocabulary items for long-term retention. The disadvantage of repetition technique is short-term retention. Retaining memorization resulted from the repetition technique for long-term retention is very difficult. This is because most of the memorization resulted from repetition technique, but not all, are stored in short-term memory. In this case, a rehearsal process is very required to maintain the memory for longer time. Repeating the same vocabulary items many times will speed up and strengthen the memory in STM and transfer it STM to LTR. If the vocabulary items stored in short-term memory (STM) is not consolidated with the process of rehearsal or repetition, the memorized vocabulary items will be lost due to decay (loss of information in memory due to overwriting of new information) and interference due to the existence of other information. In a case faced by the control group, the absence of repetition or rehearsal process results in the failure of transferring memory from STM to LTM. Further, it is undeniable that as time goes on, new information is always input into the students' memory. It fastens the decay of the memory related to the vocabulary items that has been memorized. In addition, the existence of other important information further disturbs the preservation of vocabulary items in the memory.

Compared to the repetition technique, the mnemonic loci technique is more effective in transferring the memory from STM to LTM. The mnemonic loci technique involves visual imagery or mental picture during memorization by associating the new words with the familiar location of the students. In addition, every single word is associated with other words, making it easier to remember the words. These techniques strengthen the students' memory of memorized vocabulary items which are then stored in long-term memory. When it is time to bring to mind the vocabulary items like in the 2nd posttest, the students simply need to revisit the imagined location

in sequence that they have built during memorizing, regain the related mental pictures, and convert those mental pictures into the words that must be remembered (Legge et al., 2012). The more familiar the imagined location or place, the easier it is for the students to remember it, making it easier to recall the memorized vocabulary items. It should be kept in mind that "visual imagery" is effective way of encoding where students can easily remember vocabulary items by connecting them with clear and different mental images (Zimbardo et al., 2012). In a nutshell, the use of visual imagery or mental picture as a part of the mnemonic loci technique during memorization process facilitates the transfer process between the two memories along with strengthening the memorized vocabulary items.

The finding about the effectiveness of the mnemonic loci technique compared to the repetition technique to facilitate learners in retaining and recalling the memorized vocabulary items in LTM is consistent with the findings of the previous researches. Ahour and Berenji (2015) compared the rehearsal technique and the loci technique in learning vocabulary in the context EFL learner. He discovered that the learners who implemented the mnemonic loci technique successfully retained words in LTM and recalled them better than the learners who were treated with rehearsal technique. Marzban and Amoli (2012) also proved the superiority of the mnemonic technique instruction in comparison to conventional vocabulary learning technique in term of delayed vocabulary retrieval. Safa and Hamzavi (2013) introduced that the mnemonic was effective technique for learning vocabulary and retaining the memorized vocabulary items in long-term memory.

It is better to always keep in mind that the effectiveness of the mnemonic loci technique for successful memorization, retention, and recall of vocabulary items is highly dependent on the strength of the association or links that the learners have built between the target vocabulary items and the mental images they are familiar

with since the weaker the links or associations, the easier the vocabulary items will be forgotten.

CONCLUSION

This study compares two vocabulary learning techniques, i.e. the mnemonic loci technique and the traditional memorization technique in the context of EFL learning. The traditional memorization technique involves several repetitions of vocabulary items, and thus, this technique is assumed to be a very effective vocabulary learning technique especially for intermediate level of the learner. However, the mnemonic loci technique was proved to be more successful technique of learning vocabulary in comparison with the repetition technique in facilitating the retention of the memorized vocabulary items in long-term memory. The findings reveal the fact that the mnemonic loci technique is more effective than repetition technique since it results in longer retention of the memorized vocabulary of high level students in the context of EFL learning. In addition, the use of the mnemonic loci technique also increases vocabulary learning interest of second year senior high school students who are very satisfied in using this technique for learning new vocabulary items. This technique increases students' motivation and engagement on new vocabulary items. One more important thing, the students who involve the mnemonic loci technique also shows greater amount of gains on delayed posttest.

Although the difference of the two techniques is not significant in term of STM, the effectiveness of the loci technique is apparent in term of retention of vocabulary in LTM, especially in concrete words. That is, the mnemonic loci technique is very beneficial for the initial stage for developing language when learners are confronted with concrete terms. This mnemonic technique is also be able to minimize forgetting to the lowest level and strengthens the recall to the highest level possible. When it is compared to the mnemonic loci technique, the repetition technique is more

exhausting and time consuming. As the researcher found in class activity, the students tend to feel that memorizing vocabulary with the repetition technique is very boring since they need to repeat many words, over and over again. It shows that the vocabulary learning could not create learners to meaning-making activities.

Since it has been proved that the mnemonic loci technique can provide better effect on student's retention of the memorized vocabulary items, it is good idea to include this technique in students' language learning activities in class. They will be granted with the chances to make use of vocabulary learning techniques that can help the retention and the recall of the words more efficiently and effectively. Since implementing techniques in learning language is undeniably crucial, the teacher also has a critically crucial role in implementing those techniques. In addition to be familiar with the various types of learning technique, language teachers must also be familiar with the characteristics of the learners, eg. age, background knowledge, competency level, and styles during learning.

The finding bears several implications where the mnemonic loci technique becomes a powerful technique for tutors, teachers, trainers, researchers, practitioners, and students in the context of language teaching-learning. Language teachers, trainers, and practitioners should be conscious of the significance of the technique of teaching vocabulary of foreign language and thus they can incorporate this vocabulary teaching technique in their daily foreign language teaching activity to provide students with more effective, easy to use, and enjoyable vocabulary learning technique, making them easier to master the foreign language. In addition, this mnemonic loci technique can be the answer for students who are eager of finding the best match vocabulary learning technique for them. The findings of this study may also assist the language textbook writer to introduce the mnemonic loci technique

into the material they are designing by taking into account the level of proficiency of students.

The researcher is fully aware that this study suffers from limitations as the following. First, because of its limitation in terms of participants who are all men, the researcher suggests that the next researcher should involve female participants who could then be used as additional variables in comparison with this study. Second, the study uses "Quasi Experimental Research" design in which the conclusion obtained from the subjects of the research may not apply to the population since the samples are not randomly selected from the population. Therefore, it is strongly suggested that the next study should be in true experimental research design, so that the conclusion obtained can be used in general into the population from which the sample is selected randomly. Further, the sample involved in this study is still relatively small (50 students). Therefore, it is also strongly suggested that the next study can involve more samples. More samples from various institutions will certainly produce more general results.

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