USING MIND MAPPING AND FIVE REVIEWING PATTERNS
TO IMPROVE SENIOR HIGH SCHOOL STUDENTS' VOCABULARY ACHIEVEMENT

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Abstract

This reported research was a collaborative action research to improve the vocabulary achievement of high school students using mind mapping and five reviewing patterns proposed by Buzan (2009). The subjects were 35 students of X-B class of MAN Kota Blitar, East Java, Indonesia, in 2011/2012 academic years. The data of the research included qualitative data (observation result and field note) and quantitative data (test result). This research was conducted in one cycle which included 2 meetings. The first meeting was done at Tuesday, 7 February 2012. It was for teaching vocabulary about newspaper and publishing using mind mapping and review 1. The second meeting was done at Wednesday, 8 February 2012. It was for teaching vocabulary about radio and television as well as for the review 2 at the beginning of the meeting. At the end of the meeting, the teacher gave take home tasks for review 2 of meeting 2. Further, the third review (1 week after the first learning) was given at Wednesday, 15 February 2012. It was intended for reviewing both the materials in meeting 1 and 2. The forth review was a take home reviewing tasks given 1 month after the first learning and the fifth review was a take home review assigned 3 months after the first learning. After all of the five reviews, a vocabulary test was administered. The finding showed that the implementation of mind mapping and 5 reviewing patterns could improve the students' vocabulary achievement, from the mean score of 55.66 to 80.57. The students also gave positive responses toward the strategies applied as reflected from the result of the questionnaire given.

Key words: *mind-mapping, reviewing, vocabulary achievement*

Based on the researcher' preliminary observation at the first of February 2012, it was found the following weaknesses. First, teachers lacked of media in teaching and learning process (the teacher only used an exercise book called "LKS Aspirasi"). He did not use the language laboratory, chart, mind mapping, game, song pictures, or other media/facilities. Second, the students were lazy and unmotivated. Third, the students were passive in the classroom. Fourth, in teaching vocabulary the teacher only wrote

down the vocabulary list on the white board and asked the students to find the meaning of the word in Indonesian. Therefore, the researcher assumed that instruction absolutely must be changed by the teacher by using appropriate method in order the students take apart to the lesson and got better achievement at the end of teaching learning process.

In addition, based on the result of the vocabulary test which administered to the students before the action, it could be said that the students' English ability of X-B class was low, especially in understanding the meaning of words in context. The students' mean score for the vocabulary test was 55.66, that was below the minimum school standard criterion of English mastery that required them at least have mean score 70.00.

Actually, there are a lot of interactive media or strategies to encourage students to take apart in the lesson especially in vocabulary teaching and learning. Since vocabulary teaching and learning aimed at enabling learners to understand the concepts of unfamiliar words, to gain a greater number of words, and to use words successfully for communicative purpose, it is necessary for the teacher to select and apply appropriate strategies in teaching vocabulary for the students which could improve their motivation to take apart in the lesson.

Mind mapping and five reviewing patterns proposed by Buzan (2009) can be applied by the teacher in teaching vocabulary. There are some reasons why the teacher may use mind mapping in teaching vocabulary, for example: (1) mind mapping is very appropriate and flexible to be applied for different levels of age, theme, subject, and situation either for whole class, group or individual, (2) mind mapping is a very good tool for creative thinking and problem solving, (3) in foreign language teaching and learning, mind mapping can improve memory recall of facts, words or images, (4) mind mapping is creative note taking method,

which eases us to remember much information, and (5) mind mapping is colorful, uses pictures or symbols which leads the students' interest to the subject (Deporter, Readon, and Nourie, 1997: 175). From the statement above, it can be concluded that mind mapping is potentially a good way to teach vocabulary to the students in senior high school.

In line with the previous statements, Buzan (1993:1) adds that mind mapping is a powerful graphic technique which provides a universal key to unlock the potential of brain. It imitates the thinking process, recording information through symbol, pictures, emotional meaning and colors, exactly the same like our brain process it. It means that mind mapping is very useful media for creating attractive, and enjoyable learning that lead the successfulness of the students in learning English vocabulary

In addition Buzan (2009: 39) also states that by using a mind mapping we can see what we are going to do and what we have done. It means, mind mapping may be used by the teacher or the students for planning the lesson, summarizing the lesson or recall to the lesson that the students have learnt. Moreover, Buzan (2009) also argues that mind mapping and 5 reviewing patterns will lead the students to achieve good scores in their examination test.

Talking about the success of the students' in gaining good vocabulary achievement, it is crucial for the teacher to think deeply about how to implant vocabulary in the students' mind for long term memory. In this case, the teacher may apply reviewing to facilitate the students with better memory to what they have learnt. It could be done at school or at home by giving tasks as a mean for reviewing the lesson that the students have learnt.

Usually many students are confused in deciding when they should start to review their school lessons, and most of them tend to postpone the reviews. As a result, in the time of final test, they often panic and study

for their test immediately at the night before the examination with less sleep. As a result, at the examination day they lost concentration, were sleepy and, therefore, they failed or got poor scores. Actually, the best way to review lessons is step by step, little by little, day by day, and gradually until it becomes a habit in life (Buzan, 2009:38).

Furthermore, a good reviewing model was proposed by Buzan (2009) which is called 5 reviewing patterns. Buzan (2009:125) states that if students review the lesson 5 times such as: (1) 1 hour after the first learning, (2) 1 day after the first learning, (3) I week after the first learning, (4) 1 month after the first learning, and (5) 3 months up to 6 months after the first learning), they would have permanent memory of the lesson.

Therefore, the researcher and her collaborator assumed that the use of mind mapping and 5 reviewing patterns proposed by Buzan (2009) could improve the students' vocabulary achievement and facilitate the students' memory of the words or phrases they have learnt.

The studies on the use of mind mapping in teaching English have been performed by some researchers such as: Indah (2010), Effendi (2004), and Helmasari (2008). In this case, Indah (2010) proved that mind mapping was an effective medium to teach vocabulary to the tenth grade students of SMU Negeri 15 Palembang. Besides that, Effendi (2004) also found that mind mapping was effective to increase the second year students' reading comprehension at SLTPN 43 Palembang. Further, Helmasari (2008) reported that mind mapping was effective to teach paragraph writing to the eleventh year students of SMA Negeri 14 Palembang.

Research Objective

The objective of this research is to use mind mapping and five reviewing patterns to improve the tenth year students' vocabulary achievement at MAN Kota Blitar.

Research Design

In this research, the researcher employed collaborative classroom action research through mind mapping and Buzan's 5 reviewing patterns to improve the students' vocabulary achievement of X-B class of MAN Kota Blitar. In this case, the researcher's collaborator was involved from the beginning up to the end of the research process. The action of teaching vocabulary through mind mapping and Buzan's 5 times reviewing patterns is done by the researcher, and her collaborator acted as an observer of the teaching learning process. This idea is based on Calhoun's principle (in Kasbollah, 2002:43) that argued "in collaborative action research, the researcher makes collaboration with the school teacher investigated as the researcher's collaborator to do the research activities."

Research Setting

The Research was conducted in MAN Kota Blitar starting from February to May 2012. The school is located at Jl. Jati 78 Sukorejo Blitar. This school was chosen because of some reasons such as: there are problems which need solution dealing English teaching learning process mainly on vocabulary achievement of X-B class which considered need to improve, and of course the permission from headmaster of MAN Kota Blitar.

Research Subjects

The research subjects of this research were the students of Class X-B of MAN Kota Blitar, consisting of 35 students (11 boys and 14 girls). The class was chosen as the subject because: (1) the class of X-B got the lowest achievement among the others class at the first semester (2) the students' low vocabulary achievement (with the mean score of 55.66).

Research Procedure

The procedure of this Classroom Action Research was a modified version of Kemmis and Taggart (1997:27) model which covered some steps, namely preliminary study, planning of action, action, observing the action, and reflecting on the observation. This research was held from February to May 2012. The researchers conducted this study for one cycle that planning the action, implementing the action followed by 5 times reviewing, observation and evaluation, and analysis and reflection. This was only one cycle because the purpose has been achieved with only one cycle. Further, the description of the research procedures was presented on the following figure.
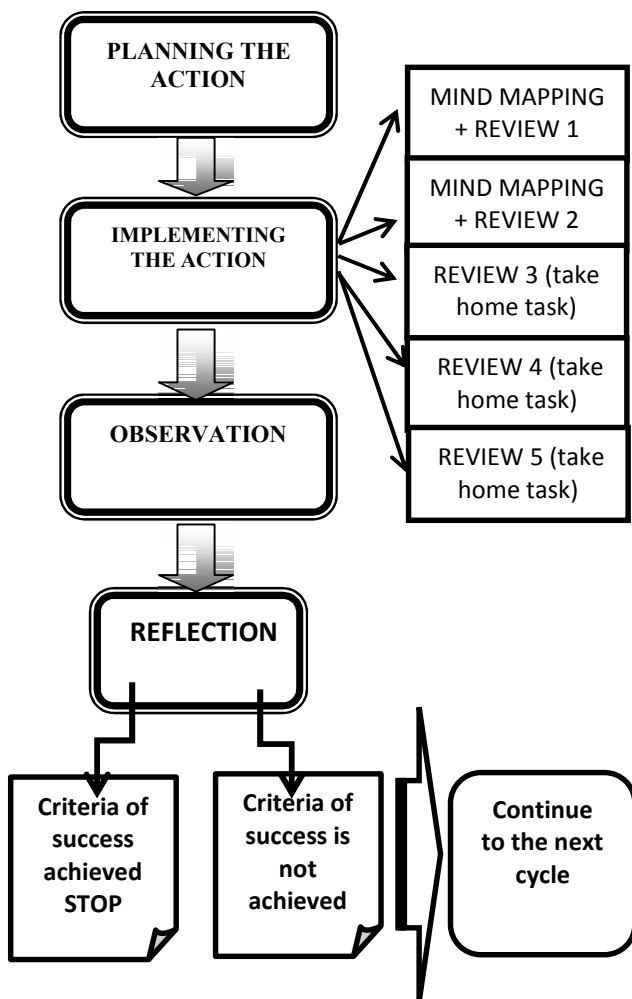

Figure1: The Procedures of Classroom Action Research (CAR)

Research Instruments

1. Test

Vocabulary test was given after the implementation of the action. It was used to know the students' development. The test consisted of 50 words about newspaper and publishing as well as radio and television in which it distributed as follows: (1) questions numbers 1-15 were in the form of multiple choice, (2) questions number 16-30 were in the form matching test, (3) question number 31-40 were in the form guided completion and (5) question number 49-50 were in form of rearranging the scrambled words into good sentences. To make the test administered valid and reliable, in this research the researcher and her collaborator conducted validity test to another class of the tenth grade students at MAN Kota Blitar (X-C) class. Furthermore, the researcher used content validity, the evidence based on content of the test's and its relationship to the construct it was intended to measure. In this case, the researcher looked for evidence that the test represented a balanced and adequate sampling of vocabulary mastery. Moreover, the content validity of the test was based on the basic competence in the tenth grade of Senior High School's curriculum.

Before the post test was given to the respondent. It was tried out first to other group of students who had the same level with the respondent to know the test items were too difficult or too easy, whether the time is enough or not and the respondents understood the instruction or not. It was tried out on 2nd May 2012 at the class X-C of MAN Kota Blitar consisting 35 students. The following is the vocabulary test that was given to the students either in preliminary test or after the action test.

2. Observations Checklist

Observation checklist was used to get the data about the students' activities during the teaching learning process. In this case the researcher provided 2 observations checklist;

the first to observe the teacher' preparation, presentation, teaching method, personal characteristic, and teacher-students interaction in the classroom. The second observation checklist was intended as media in observing the students' activities in the classroom.

3. Questionnaire

A questionnaire was used to collect the data about the students' reaction toward mind mapping and Buzan's 5 times reviewing patterns in learning vocabulary. The Questionnaire contained 10 items with Likert scale options: Absolutely Agree (AA), Agree (A), Not Sure (NS), Not Agree (NA), and Absolutely Not Agree (ANA). It was adopted from Kristiana (2011).

4. Field note

To get the rich data, this research also used field notes to write down the activities of teacher and students in the classroom which are not covered in observation checklist. Further, field notes composed of the descriptions of what was being heard, seen, experienced and thought in the classroom. The recorded data dealt with the phenomenon such as: time allotment, classroom atmosphere, tasks organization, and teacher's feedback.

Criteria of Success

The criterion of success in this research was designed on the basis of the school criterion: the students are considered good or successful in their vocabulary achievement if they achieve at least 70 of the optimal score competence level of 100. It means that the students' mean score of the post-test should equal to or is higher than 70. Moreover, beside the students' score in vocabulary achievement, the result of questionnaire was used to support the explanation of the criteria of success.

Kinds of Data and Data Sources

There were two kinds of data in this research, namely quantitative data and qualitative data. Quantitative data in the research refer to the data acquired from the test and questionnaire. Moreover qualitative data refer to the result from observation, questionnaire and field notes.

Techniques of Data Collection

The data were collected by (a) conducting an observation, (b) making field note, (c) administering test, (d) distributing questionnaire.

Data Analysis

The data analysis was used by researcher in this research followed some procedure such as: classifying the data, presenting the data and the last was concluding the data.

1. Data Classification

In this research, the data were classified into two categories, the first was quantitative data and the second was qualitative data. The quantitative data referred to the data which was taken from the students score as well as the questionnaire. However, the qualitative data were taken from the observation and check list as well as field note.

2. Data Display

The classified data from observation result and field note were described qualitatively using categories of achievement such as: very poor, poor, fair, good, and very good. Moreover, the data taken from the test was presented in tables, and the data from the questionnaire was calculated in percentage.

Furthermore, the use of quantitative data analysis was classified as follow:

1. The rule to decide the accomplishment degree and the mean score

- Rule to find an individual degree of mastery

$$Degree\ of\ Mastery = \frac{Number\ of\ correct\ items}{Number\ of\ items} \times 100\%$$

(Adopted from *Petunjuk Guru Bahasa Inggris* for the Senior high school).

- *Rule to find mean score*

$$M = \frac{\Sigma X}{N}$$

M	=	Mean score
ΣX	=	the total scores of the students' vocabulary test
N	=	the numbers of students

(Adapted from Beast, 1981*).*

2. The rule of calculating the percentage of students' questionnaires responses

$$\% = \frac{Total\ number\ of\ students\ choosing\ certain\ items}{Total\ Number\ of\ students} \times 100\%$$

Concluding the Data

Data conclusion was done after the researcher evaluated and interpreted the data. It is important to conclude the data to know whether another cycle was necessary. In this research, researcher stopped the action at cycle 1 because the students had achieved mean score 88.57. That result was higher than the minimum mastery criterion stated in that school (70.00). Moreover, that result was supported by the results of observations which indicated the improvement of the teaching learning process from teacher and students' part and the result of questionnaire dealing the implementation of teaching learning vocabulary using mind mapping.

Reflection

Reflection is the most important part in Classroom Action Research, it is needed to evaluate whether another cycle to solve the problems is necessary or not. The number of cycles cannot be predicted in advance. A classroom action research may take only one cycle if after the first cycle, all the targeted criteria of success have been achieved. The researchers, in fact, have to do their best to plan their classroom action research as few cycles as possible.

If all of the problems in teaching vocabulary are solved, there is no need to conduct the second cycle. In reflection, the researchers consult the result of data analysis and compare it with the criteria of success. If the result of our first action fulfills the criteria of success, the action is stopped. If it does not fulfill the criteria of success, the researchers should continue to the second cycle by revising the lesson plan (Latief, 2010:87).

Furthermore, Mistar (2010:31) states that "reflection in a classroom action research is an effort to evaluate whether the teaching learning process succeeds or fails based on the criteria of succeed that have been decided before".

The reflection in this research was done by the researcher and her collaborator after accomplishing each of the research steps in order to know whether we could stop the research or should continue to another cycle. In this case, they decide to stop this research in the first cycle, because the criterion of succeed of the research has been achieved by the students. The student's mean score was 80.56; it was higher than the criterion of success of the research (70.00).

The Result of Teaching Learning Process Analysis

The analysis of the teaching-learning process was done based on the result of field notes and the observation checklist. Some findings show improvement from both the student and teachers' parts. On the part of the students' attitude towards the task, it was found that the students were actively involved and participated actively in the lesson. Further, the teacher' ability in conducting teaching and learning process was observed and categorized as excellent

and above average. Mostly, the indicators in observation checklist were rated 4 (excellent) and 3 (above average) by the collaborator researcher. In this case, the teacher was evaluated in the five points namely: (1) preparation, (2) presentation, (3) execution/method, (4) personal characteristics, teacher-students interaction. Dealing with preparation, the teacher was well prepared and the lesson execution was good.

Further related to presentation, the teacher explained the materials well, smoothly, in sequence, and logically. Moreover the teacher also paced the lesson well, gave the lesson direction to the students clearly, for example in asking them to do the tasks, to play mind map, to do homework etc. Besides that, the teacher always tried to make the students talk or write for example by asking question, asking them to write the sentences, etc. Further, she also realized if there were some students who were having trouble in understanding the lesson. In this case, she asked the students the points they didn't understand and she explained it again carefully. Further, in presenting the materials the teacher was very encouraging, full of enthusiasm, and showed the interest in the lesson,

Furthermore, dealing with execution or method, the teacher used various activities in during the class, reinforced the material, walked around the class, made eyes contact with the students, and knew the student's name well. She also distributed the questions appropriately and used media in teaching. Contextual learning was used with clear example and illustration of the materials through mind mapping.

On the teacher's personal characteristics, the teacher was patient in answering the students' questions. She had audible voice for all students in the class. She also had a good appearance, initiative and was resourceful. She had appropriate and acceptable use of English while she is teaching the students.

The last point is related to teacher - student interaction in the classroom. Dealing with that point, the teacher tried to set the class into a student-centered class. She encouraged students' participation in classroom by asking them to do activities or to raise or answer questions. Further, she was able to control and direct the class well; she sometime relaxed the students and made students work in group or individual. In conclusion teacher and the students had excellent interaction for enjoyable learning in the classroom.

An analysis of the result of the test given at the end of cycle 1 showed that an improvement of learning result was achieved. In this case, the mean score of the student's in the vocabulary test after the action increased significantly after the implementation of mind mapping and 5 reviewing patterns proposed by Buzan (2009). The mean score of the students was 80.57. The students' mean score was higher than the students' mean score in vocabulary test before the action (55.66) and the minimum criterion mastery stated in the school (70.00).

The Students' Questionnaire Result

The data on students' opinion towards learning vocabulary using mind mapping and Buzan's 5 reviewing patterns was obtained through a questionnaire with 10 statements given to 35 students of the tenth year of students in X-B class of MAN Kota Blitar. The questionnaire contained four variables to measure: (1) learning motivation, (2) learning result, (3) tasks accomplishment and (4) social relationship. The result showed that on the first variable "learning motivation", the students are motivated to learn vocabulary using mind mapping and Buzan's five reviewing patterns strategy. It can be seen from the result of the four statements given related to it. For the first statement (item no. 1) "I am very eager to learn vocabulary using mind mapping and Buzan's 5 reviewing patterns", 30 (85.7%) students chose

"absolutely agree" and 5 (14.3%) students "agree".

Moreover, 29 (82.9%) students state "absolutely agree" and the rest 6 (17.1%) students state "agree" for the statement (item no. 2): "Learning vocabulary using mind mapping and Buzan's 5 reviewing patterns is an interesting and enjoyable activity". On the other hand, in the third statement for this variable, statement no. 6, "It is difficult for me to learn vocabulary by mind mapping and Buzan's five reviewing patterns", 2 (5.7%) students state "not sure". Moreover, 4 (11.4%) students state "not agree", and the rest 29 (82.9%) students state "absolutely not agree". Meanwhile, for the next statement (item no 7), "Learning vocabulary using mind mapping and Buzan's 5 reviewing patterns strategy is a worthless and time consuming activity", 6 (17.1%) students state "not agree" while the rest 29 (82.9%) students state "absolutely not agree".

The data on the second variable "learning result" also showed satisfactory response. There are 4 indicators representing this variable. The first indicator is statement (item no. 3) "In my opinion learning vocabulary using mind mapping and Buzan's reviewing patterns can increase my vocabulary". 29 (82.9%) students chose "absolutely agree", 6(17.1%) students chose "agree". Second is statement no. 4, "Mind mapping and Buzan's 5 reviewing patterns help me learn and memorize new words". 30 (85.7%) students' state "absolutely agree" and 5 (14.3%) state "agree". The next is statement no. 5, "Learning vocabulary using mind mapping and Buzan's five reviewing patterns enabled me to learn words and their meaning in comprehensible way". 28 (80%) students state "absolutely agree" while the rest 7 (20%) students state "not sure". And the last indicator is statement (item no 10), "Learning vocabulary through mind mapping makes me brave to express idea or asking and answering the question". For this 29 (82.9%) students state "absolutely agree" and 6 (17.1%) students state "agree."

The third variable "task achievement" also showed good response. As it can be seen in statement no. 8, "Using mind mapping and Buzan's 5 reviewing patterns makes me motivated to do the class tasks or take-home tasks", 30 (85.7%) students state "absolutely agree" and 5 (14.3%) students sate "agree"

The last variable "social relationship" also showed acceptable response. It can be seen from the result of statement no. 9, "Learning vocabulary using mind mapping and Buzan's 5 reviewing patterns promotes the togetherness among students". 29 (82.9%) students choose "absolutely agree", and 3 (8.6%) students state "agree", while 3 (8.6%) students state "not sure".

Reflection

Based on the result of the analysis both the teacher teaching-learning process and students' learning result in cycle I, it was shown that the students made an improvement in learning vocabulary. This improvement could be seen from indicator of success achieved as follows. The obtained mean score was 80.57 was higher than the standard minimum mean score (70.00). Therefore, it was decided that the next cycle was not necessary. In addition, that result was supported by the result of teaching learning process which was derived from observation checklists and field note in which the teaching learning process in that class was very good/ excellent and it was also supported by the students' positive responses toward the use of mind mapping and five reviewing patterns in learning vocabulary as presented previously. See Figure 2.
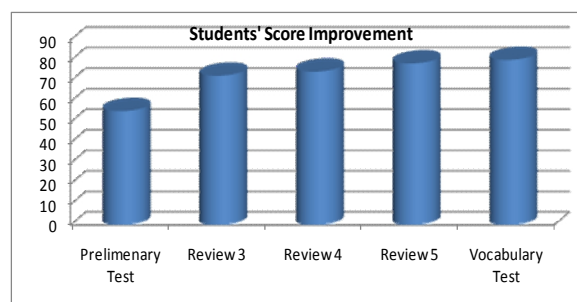

Figure 2: Students' Improvements

Figure 2 illustrates the students' improvement in learning vocabulary by using mind mapping and 5 reviewing patterns which looked firm in the improvement.

The result of the research that was presented above was in line with Indah 's experimental research result on the use of mind mapping to teach vocabulary, in which she reported that the vocabulary achievement of the students of IKIP PGRI Palembang increased after being taught using mind mapping. She recorded that the calculation result of the matched t-test formula was 2.396. It indicated that the calculated t obtained was greater than the critical value (1.725). The finding of her study showed that mind mapping is effective in teaching vocabulary to the tenth year of SMUN 15 Palembang.

Moreover, the researchers' result was also in line with Yusuf's experimental research result entitled "The Effectiveness of Mind Mapping Technique In Increasing the Second Year Students' Reading Comprehension at SLTPN 43 Palembang" The result of the calculation of the t-test formula was 4.19. It indicated that the t value was higher than the critical value (02.021). The findings of his research showed that mind mapping is significantly effective in teaching reading comprehension to the subject of SLTP Negeri 43 Palembang.

In addition, the researchers' result was in line with experimental research result by Hermalasari entitled "Teaching Writing Paragraphs by Using Mind Mapping to The Eleventh Year Students of SMA Negeri 14 Palembang in which she reported that the students' average score in pre-test was 59.68 and the average score of post-test was 67.85. It indicated that calculated t value was higher than the t value on the table (1.684). It means that mind mapping is effective to teach writing paragraphs at the eleventh grade in that school. And now, with this current research mind mapping is also proved effective to teach vocabulary

The Strength and the Weaknesses of Mind Mapping and 5 Reviewing Patterns

There is no perfect thing. Besides having some strengths mind mapping and 5 reviewing patterns also have some weaknesses. The strengths include (1) leading the students to have better memory, (2) easy to apply in the classroom as media to present the material, media to do the task, media to review the lesson, and media to assess the students' achievement, (3) interesting, and attractive media to teach all themes or sub-theme.

Further, mind mapping and 5 Buzan's reviewing patterns were a pairs of strategies which support each other. As Buzan (2009:39) argue the best way to review the lesson is using mind mapping. With mind mapping to review the lesson, students will have better memory of the materials they have learnt. Better memory will make them easier in doing the test. It was proved by the students' vocabulary mean score after applied with those strategies in this research.

However, mind mapping and five reviewing patterns also have weaknesses such as: (a) Mind mapping and 5 reviewing patterns need consistency as well as continuity of implementation either in the for of classroom implementation by teachers or at home reviews by students following the procedures given. Especially for the strategy of reviewing the lesson, it must be done seriously based on Buzan's 5 reviewing patterns. Buzan's 5 reviewing required teachers and students to review the lesson until 5 times based on these following rules: (a) one hour after the first learning, (b) one day after the first learning, (c) one week after the first learning, (d) one month after the first learning and, (e) three up to six months after the first learning. Those reviewing procedures may be difficult to do for students at the first time. Besides, with five time review, the teacher must provide and prepare more tasks, and of course it needs additional cost to prepare them as well as

need additional time to do. In addition, it is not easy to change the habitual linear note writing in preparing teachers' teaching materials or presentation. While with mind map, teachers need to be creative in making mind maps and present them in the class. If they don not have creativity and a good understanding about the material, the teachers would have problems in translating the materials into mind maps. Mind map reflects the materials to teach in the class. Therefore, before teachers make mind maps, they must understand the materials well so that they can generate the good key words. Otherwise, the mind map would be confusing for the students. Further, some teachers may not have a good ability to use multimedia or technology in teaching and learning such as in operating computer, laptop or internet applications. Or it can be said that mind map is still difficult to make for some teachers who did not have computer mastery or creativity to draw it.

In mind maps, everything is supposed to be provided on a single page. This is a tough challenge for teachers who have comprehensive and complex topic to deal with in the classroom. A mind map which is made carelessly or which is too ambitious to cover all aspect would look so crowded and this might cause students difficult to understand.

Conclusion and Suggestions

Mind mapping and 5 reviewing patterns proposed by Buzan (2009) can improve the tenth year students' vocabulary achievement. Therefore, the English teachers are recommended to apply this model as one of alternatives teaching technique to teach vocabulary in the classroom. Besides that, the English teachers are also suggested to inform or discuss this model of vocabulary teaching through teachers' forum such as workshop and seminar.

It is suggested that parents with elementary, junior or senior high school sons or daughters practice Buzan's 5 reviewing patterns as strategy to review their lesson in order to improve their learning achievement. Furthermore, the students are also recommended to make mind map of their lessons at home after school and do the review 5 times based on the certain procedures as Buzan proposed. So, the students must be active both in the classroom and outside of the classroom for reviewing their lessons, for example, by summarizing, mapping, re-reading the material by themselves or by reviewing them in peer learning, and group learning at home.

In addition, this research is an action research in which the result cannot be generalized. It is advisable or recommended that future researchers would conduct the research with different design for example experimental research to know the effectiveness of Buzan's 5 reviewing patterns on certain skills or subjects. Such research would be useful to strengthen or reject this research result.

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