The Effectiveness of Memory Strategies' Training on Students' Vocabulary Retention: Anaction Research at A High School in Thai Nguyen

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Abstract
It is a fact that many students find reading comprehension one of the most challenges when they learn a foreign language. This study attempts to investigate the demotivating factors in reading comprehension that learners at a high school may have. The study carried out among 85grade 11thstudents at a high school in Thai Nguyen. The main instrument employed for the data collection was questionnaires for both teachers and students. To identity the students' problems with vocabulary retention, a questionnaire or otherwised called Vocabulary Knowledge Scale (VKS) was administered to the students who were studying English as a compulsory minor subject. After the questionnaires were returned, the students' responses were analysed.The findings of the study reveal that students' lack of linguistic and cultural background knowledge, the teachers' teaching methods, and difficulties from the textbooks were the most dominant demotivating factors for learners at a high school in Thai Nguyen. Based on the findings, recommendations are provided to solve the problems.
Key words: *learning strategies, memory strategies, vocabulary retention, reading comprehension*

I. Introduction

Vocabulary is considered as essential part of language learning. According to Knight (1994, cited in Gu, 2003) learning words is the most importance aspect of language acquisition. Learning vocabulary is regarded as the basis of obtaining other skills. Vocabulary deficiency can result in weaknesses in reading comprehension, listening comprehension, speaking competence, writing performance and grammar accuracy. Therefore, learning vocabulary is an indispensable step of second language (L2) acquisition. Students must be taught on how to process information deeply. This view confirmed the role of understanding and applying vocabulary learning strategies (VLS).

Studying VLS has been an interest for a great deal of psychologists, linguists and language teachers for a long time. There are numerous studies conducted about VLS and their effectiveness in learning vocabulary, and these researchers almost have attempted to develop a framework of category of VLS (O'Malley& Chamot, 1990; Oxford, 1990; Gu & Johnson, 1996; Schmitt, 1997; Nation, 2001).

Vocabulary retention is one of the problems vocabulary learning. Many students have not known how to use memory strategies, thus the training of memory strategies is essential.

The study aims at finding out the extent to which the training of memory strategies helps the students to retain the learned words better. The training in this study is limited to four strategies as introduced in Oxford's taxonomy (Oxford, 1990). These are structured reviewing, using mechanical techniques, using imagery and placing new words into a context.

To achieve the above mentioned aims, the following research questions were proposed:

- What are the problems second language learners have with vocabulary retention?
- To what extent does applying the 4 selected strategies, i.e, structured reviewing, using mechanical techniques, using imagery and placing new words into a context help to improve students' vocabulary retention?

II. Methodology

An action research is initiated and conducted by the teachers with their own students in their classroom. The purpose and function of Action Research is to help the teacher to improve his or her own teaching practices (Nunan, 1992). This study aimed at solving one particular problem that the teacher-researcher of the study was

encountered with: How to help her students retain words better. The assumption is that the training of memory strategies may lead to better word retention.

Data collection
The data collection procedure was conducted as one circle of an action research and could be illustrated into three phases.
- Phase 1
    The very first task in this phase was to investigate the problems that students often encounter when they deal with vocabulary. To fulfill this task, both a VKS test and a semi- structured group interview were carried out.
    The VKS was given right in the first session in week 1 to check out students' ability to retain given words in the previous course.
The group interview was delivered later at the beginning of the second session so as to create comfortable and friendly atmosphere, the suitable one for discussing and sharing ideas. Together with the two main questions to keep students on the right track, follow- up questions and some, prompts were provided in order to orientate the interviewees and prevent them from presenting irrelevant information. Students had a chance to discuss and share their own problems, and teacher took time to ask detailed questions and take notes. It took about 20 minutes for the group interview to be completed.
    The pre-test was delivered right after the interview. It was a test with items taken randomly from the 4 topics which were scheduled to-be taughtduring the treatment. The result of this test would then be used to compare with the one taken from the immediate post-test (known as post-test 1) and the delayed post-test (post-test 2) to check the students' ability to retain vocabulary and evaluate the intervention's rate of progress.
- Phase 2
    From week 2 to week 10, the researcher planned and conducted the treatment in which the students were introduced and explained about four sub-memory strategies. During the treatment, the teacher delivered her students the in-class handouts in which activities and exercises were provided to help them to understand and use the four sub-memory strategies and finish the tasks. These four submemory strategies (structured reviewing, using mechanical techniques, using imagery, and placing a new word into a context) were designed to appear at fair frequency in each big vocabulary topic.
    Specially, after each lesson in class, there would be a handout for students for home practice at home- handouts. Together with the familiar exercises as multiple-choice, gap-filling and word-formation, the teacher also added one more part: part 3 - self learning and expanding strategy part. In this part, students would have to revise all the new words given in the lesson in their own ways by using one of the introduced strategies. The students then were required to write down in their diaries all the ways they had applied to deal with words. This activity was checked: regularly right at the beginning of the next lesson and discussed in the whole class in each diary discussion. In these review sessions, the teacher then called some of her students to stand up and describe how they had learnt the required word by using one of the given strategies. By sharing, students could learn from each other the better way to approach the new words, and the teacher could also confirm whether her students had used what she had taught them in class or not.
- Phase 3
    The two post tests (the immediate post-test-post test 1 and the delayed post-test - post test 2) were employed to measure the improvement of students' vocabulary retention in terms of short-term and long-term after being introduced four submemory strategies. While the immediate post-test was conducted right after the treatment in week 10, the delayed post- test was employed 2 weeks later (week 12).

Data analysis procedures
    The data collected were categorized under the two research questions. To be specific, the VKS test served to answer the first research question the semi-structured, the learners' diaries, the test score addressed the last question.Regarding to the first question, in the VKS test, the students would mark the given word from Level 1 to Level 5. The teacher then counted the number of each mail for each student, expressed the figure as a percentage and illustrated in form of a chart.For the second question, in the interview, the data was collected and generalize into different groups of reasons. The teacher then calculated and illustrated data in table.By this way, the researcher and readers could easily see the outstanding problem that students encountered when retaining vocabulary.
    With reference to the last research question, all the learners' diaries were collected. There were totally 5 entries for each student, so 425 for all 85 students. The teacher then checked each entry and calculated the number of each strategy used in each entry. These figures were then converted to percentage and illustrated under the format of a pie-chart. Moreover, the data collected from the extra column in the post-test 1 was also

analyzed here to answer the last question. The researcher would count the number of each four sub-memory strategies used in the test, describe and compare with the results from the diaries.

Next, for data from tests, all the test scores were first recorded. Mean scores in each test were then calculated. Both the performances of the total group and each student were then indicated by comparing mean scores between the pre-test and the two other post-tests. By this way, the improvement of students' vocabulary retention in short term and long term could be revealed.

III.   Literature Review

Language learning strategies

Research into language learning strategies (LLS) began in the 1960s. Particularly, developments in cognitive psychology influenced much of the research done on LLS. In most of the research on LLS, the primary concern has been on "identifying what good language learners report they do to learn a second or foreign language, or, in some cases, are observed doing while learning a second or foreign language" (Rubin & Wenden, 1987:19). Rubin classified strategies in terms of processes contributing directly or indhectly to language learning. The strategies initiated by Rubin were expanded and refined by other scholars and researchers.

According to Nunan (1991:168), "Learning strategies [...] are the mental processes which learners employ to learn and use the target language". Nunan's definition restricts learning strategies only to "mental processes". Richard et al. (1992:209), offers a broader definition of learning strategies, that is, learning strategies are intentional behavior and thoughts that learners make use of during learning in order to better help them understand, learn and remember new information.

Oxford (1990:8) defines learning strategies as "specific actions taken by the learner to make learning easier, faster, more enjoyable, more self directed, more effective and more transferable to new situation".

Ellis (1997:76)defines learning strategies as "the particular approaches or techniques that learner employs to try to learn a second language".. He further explains that learning strategies can be behavioral or mental and are typically problem - oriented.

Rubin (1987:19) is even more explicit when he defines; learning strategies as "any set of operations, steps, plans, routines used by the; learner to facilitate the obtaining, storage, retrieval and use of information, that is, what learner do to learn and do to regulate their learning".

According to O'Malley and Charmot (1990:1), learning strategies are "special ways of processing information that enhance comprehension, learning, or retention of the information" or in their other words learning strategies are the "special thoughts or behaviors that individuals use to help them comprehend, learn, or retain new information".

Bridging the gap between students' learning styles and teachers' teaching styles will be a powerful means to guide students towards successful learning. Thus, teaching students learning strategies should not be neglected. Oxford (1990) describes learning strategies as "specific actions taken by the learners to make learning easier, faster, more enjoyable, more self-directed, more effective, and more transferable to new situations". Learning strategies will compensate for the weakness of a learning style and maximize the strengths of a learning style powerfully.

To emphasize the importance of LLS, Chamot et al. (1999) stated, "differences between more effective learners and fewer effective learners were found in the number and range of strategies used, in how the strategies were applied to the task, and in whether they were appropriate for the task". Therefore, teaching learning strategies is especially useful for the latter learners. If they can find effective strategies, they will be able to succeed, through effective strategy teaching, students will acquire not only vocabulary but also the way for studying.

The language learner capable of using a wide variety of LLS appropriately can improve his language skills. According to Oxford (1990), memory strategies "help students store and retrieve new information", cognitive strategies "enable learners to understand and produce new language by many different means", compensation strategies "allow learners to use the language despite their often large gaps in knowledge", metacognitive strategies "allow learners to control their own cognition - that is, to coordinate the learning process by using functions such as centering, arranging, planning, and evaluating", affective strategies "help to regulate emotions, motivations, and attitudes" and social "help students learn through interaction with other". Developing skills in three areas, such as metacognitive, cognitive, and socio- affective can help the language learner build up learner independence and autonomy whereby he can take control of his own learning.

Vocabulary learning strategies

Alexander (2000: 16, cited in Quach, 2007) stated that "Comprehension improves when you know what the words mean" and "words are currency of communication. A robust vocabulary improves all areas of communication - listening, speaking, reading and writing".

Vocabulary learning strategies (VLS) are one part of LLS which in turn are part of general learning strategies (Nation, 2001). LLS encourage greater overall self-direction for learners. Self-directed learners are independent learners who are capable of assuming responsibility for their own learning and gradually gaining confidence, involvement and proficiency (Oxford, 1990). So, the case with VLS that students need training in VLS. Research into VLS stems from two directions of research. The first one is the research of general language learning strategies which showed that many of the learning strategies used by learners are in fact vocabulary learning strategies (e.g. memory strategies in Oxford's classification, 1990) or may be used in vocabulary learning. The second one is the research oriented towards exploring the effectiveness of individual strategy application in vocabulary learning. Generally, research conducted so far has revealed that many learners employ learning strategies in vocabulary learning more frequently than in other language learning activities (O'Malley et ah, 1985a, cited in Singleton, 2008). However, theyare mostly inclined to use basic vocabulary learning strategies (Schmitt, 1997). Therefore, it is necessary for language teachers to make strategy instruction an essential part of any foreign or second language program.

Studying VLS has been an interest for a lot of psychologists, linguists and language teachers for ages. There are numerous studies conducted about VLS and their effectiveness in learning vocabulary and this vocabulary field has been productive in the last two decades. Some researchers have attempted to develop a framework of category of vocabulary learning strategies. Following are the three most prominent taxonomies by Gu and Johnson (1996, cited in Ghazal, 2007), Schmitt (1997) and Nation (2001).

Gu and Johnson (1996 as cited in Ghazal, 2007) divide L2 vocabulary learning strategies into: metacognitive. cognitive, memory and activation strategies.

Metacognitive strategies are composed of selective attention (what words are: important to learn and are essential for adequate comprehension of a passage) and self-initiation strategies (a variety of means to clarify the meaning of vocabulary items).

Cognitive strategies include guessing strategies, skillful use of dictionaries and note-taking strategies. Learners using guessing strategies draw upon their background knowledge and use linguistic clues like grammatical structures of a sentence to guess the meaning of a word.

Memory strategies are comprised of rehearsal and encoding categories. Word lists and repetition are examples of rehearsal strategies. Encoding strategies entail such strategies as association; imagery; visual, auditory, semantic, and contextual encoding as well as wordstructure (i.e., analyzing a word in terms of prefixes, stems, and suffixes).

Memory strategies

Thompson (1981, cited in Schmitt, 1997) defined memory strategies as "...mnemonics work by utilizing some well-known principles of psychology: a retrieval plan is developed during encoding, and mental imagery, both visual and verbal, is used.They help individuals learn faster and recall better because they aid the integration of new material into existing cognitive units and because they provide retrieval cues."

"Contextualized" and "de-contextualized" are two ways of learning which still raise conflicting views among language professionals concerning about language learning in general and vocabulary learning in particular.

Oxford and Scarcella (1994, cited in Nemati, 2009) observe that while "de-contextualized learning" (word list) may help students memorize vocabulary for tests, students are likely to rapidly forget words memorized from lists.

Nielson (2006, cited in Nemati, 2009) suggested that "de-contextualized learning" should be introduced at early stages of language development as it has been found to be more effective in building a fundamental vocabulary than the contextualized reading. That means teachers of beginner level learners need to include greater amount of "de-contextualized" vocabulary instruction (word list) at the beginning and then gradually increase more context-based vocabulary learning (extensive reading) as the language ability of the learners develops.

IV.   Findings And Discussions
Findings from learners' diaries

Learners' diaries were first employed so that the teacher could make sure that her students had practiced four strategies at home regularly, which helped to control their usage of strategies and confirm the results of later vocabulary retention tests. There were 5 diary entries for each student. Each entry covered from 8 to 10 words depending on each unit. Thus, each student had to cover 50-70 words for all 5 diary entries. This was not an easy task for students but they had fulfilled with a comparatively sufficient quantity.

After collecting all students' diary entries, the researcher started to calculate the number of each strategy appearing in each entry. The figure could also be visually illustrated in the following pie-chart:
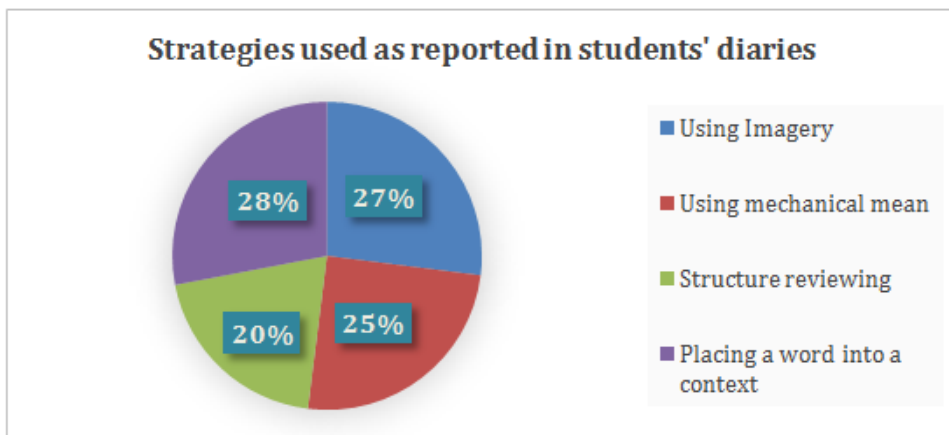
Chart 1: Strategies used as reported students' diaries

As can be seen from the chart, it is surprising that the rate of using all four submemory strategies seemed to be comparatively equal among the students (24% for associating, 28% for placing the word into a context, 19% for grouping and 29% for using imagery). In each entry, students tended to make use of all four strategies learned to deal with words. The chart also revealed that "using imagery" and "placing the word into a context" was the two strategies which appeared the most in students' entries (29% and 28%, respectively), which meant most of the students had a preference for visual learning and linking the word with a specific situation to retain the word, "structured reviewing" seemed to be least used among students; however, the number for "using mechanical techinques" was 19%.

Results from the self-report column in the immediate post-test

The researcher had carefully added this part in the immediate post-test in order to identify which strategies had been used to deal with each given word. This also helped to prove that the results gained from the system of 2 post-tests were completely reliable as the result of applying memory strategies in learning vocabulary, not other methods. The data collected from the added column in the immediate test showed the fact that all the four strategies were applied when students learned the words (of course, students only noted down the strategy for the word they gave level 4 or 5). The following chart could be used to indicate the collected data:
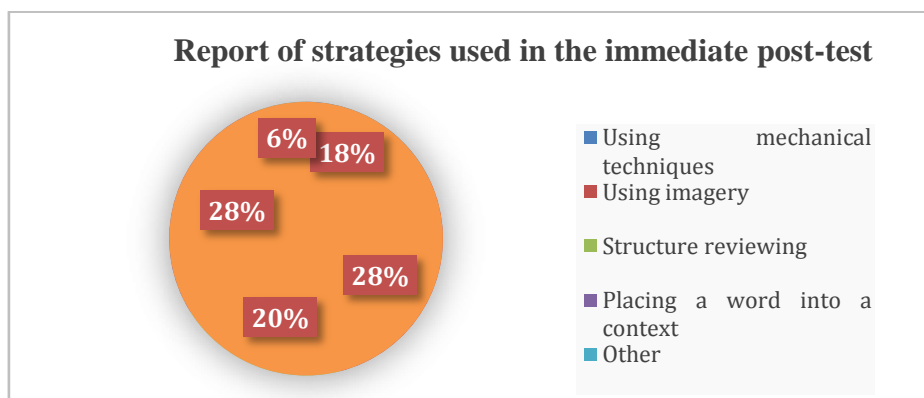

Chart 2: Report of strategies used in the immediate post-test

6% was the percentage that students reported for not using any among 4 given memory-strategies, this was a small number comparing with 29% for the strategy "placing the word into a context", 28% for "using imagery", 20% for "using mechanical techniques" and 18% for "structured reviewing". This emphasizes the effectiveness and popular usage of taught memory strategies among students and also proved the improvement of students' vocabulary retention because of the treatment.

In short, using memory strategies in general and 4 sub-memory strategies in particular was obviously successful both in storing and retrieving knowledge of vocabulary in terms of the whole group and each individual. The improvement that students displayed in the immediate post-test (post-test1) showed better storing ofmaterial in the short-term and delayed post-test which was the sign of bettej rotrieval in the long-term retention.

- **Results from post-test 1**

The whole group's performance

The immediate post-test was conducted right at the last session of the course. After collecting the data, calculating the number scores ranging from 1 to 5 in each pre-test and immediate post-test, the researcher used the below table to present the data:

Score	Pre-test	Post-test
1	2075	293
2	755	352
3	474	911
4	542	1730
5	383	1005
Mean	2,14	3,69
Mean Difference	1.55	

Table 1: Mean scores gained by the group in the pre-test and immediate post test

It can be derived from the findings above, the number in score 1 (I don't remember having seen this word before) and score 2 (I have seen this word before but I don't know what it means) between the two tests has a sharp decrease (from 2075 to 293, and from 755 to 352); whereas, the number in score 3, 4, and 5 for knowing the words but at different levels has increase dramatically. The following line chart will help to make it clear about the improvement of the total group after the immediate post-test:
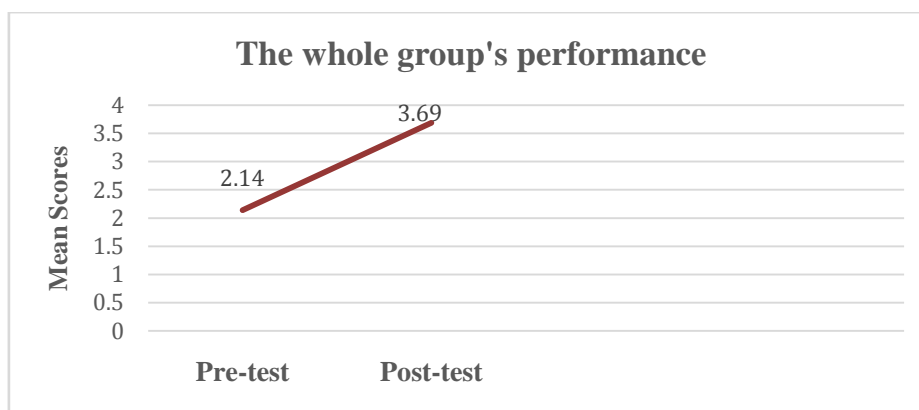

Chart 3: The whole group's performance in the pre-test and the immediate post test

The students'5 vocabulary retention have gone up, raising the mean score for same test from 2.14 to 3.69. The number 1.55 illustrated the difference between the mean score in the pre-test and the immediate post test, which helped to improve the fact that: obviously, the students' short term vocabulary retention has been increased. During the course, as being introduced the four sub-memory strategies by the teacher and given the chances to self-practice, the students could somehow approach four sub-memory strategies effectively and their improvement has been revealed clearly when comparing the results between the two tests.

Individual's performance

- **Results from post-test 2**

The whole group's performance

As stated in the previous chapter, the delayed test (post-test 2) was conducted 2 weeks after the end of the course and aimed at measuring students' vocabulary retention in a long term. The delayed post test maintained the same format and content as the immediate post test (post-test 1). After doing some careful calculation, the data could be illustrated in the table below:

Score	Pre-test	Post-test 2
1	2075	10
2	755	113

3	474	800
4	542	1867
5	383	1635
Mean	2,14	4,30
Mean Difference	2,16	

Table 2: Mean scores gained by the group in the pre-test and the delayed post-test

The results from the above table illustrated the maintenance of improvement of students' retention between the delayed post-test and the pre-test. The number of score 1 and score 2 continued to decrease sharply and approached the minimum point. This described the fact that: almost all the students have known the meanings of the words but at different levels. The difference between the mean score of the pre-test and the immediate test and between the pre-test and the delayed test has risen from 1.55 to 2,16, which can demonstrate the fact that: in the delayed test, almost students did much better than in the immediate test. This also proved the improvement of students in both short-term and long-term retention.
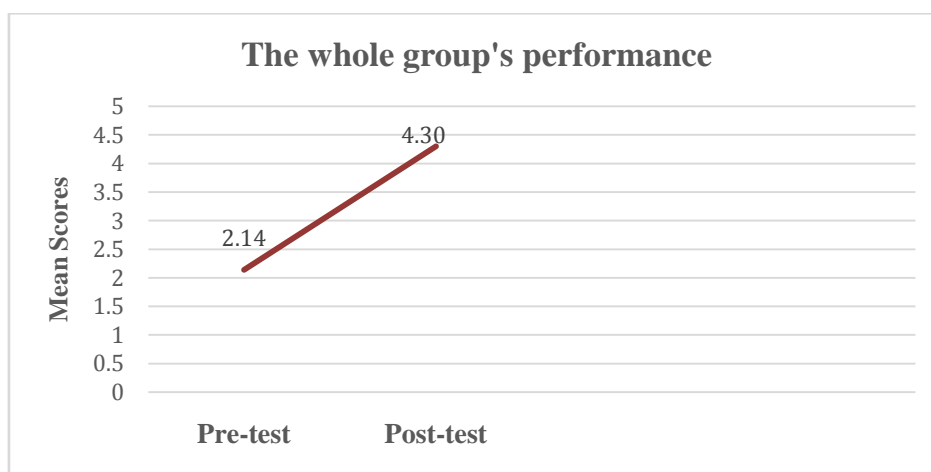

Chart 4: The whole group's performance in the pre-test and the delayed post test

After the two post-tests, the data about the whole group's performance can be combined and illustrated in the following line chart:
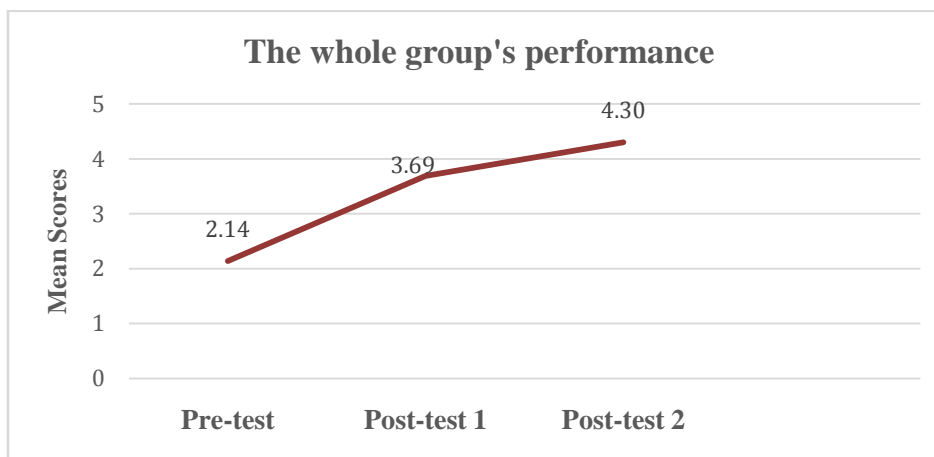

Chart 5: The whole group's performance in the pre-test, post-test 1 and post test 2

The above line chart indicates that the whole group still stayed stably at the results gained from the post-test 1 and post test 2 (slight deviation between two points: post-test 1 and post-test 2). The improvement was not blown away but kept moving.

As can be seen from those tables, the results gained from the post-test 1 (the immediate post-test) seemed to be maintained in almost individuals' performance. The change between the post-test 1 and post-test 2 had a tendency to rise up although there was just a small movement (the lowest was 0.02 and the highest was

1.4). There was only one student (S8) who had a slight fall when comparing his result in post-test 1 with the one in post-test 2.

V.   Conclusions

By using both a VKS test and a semi-structured interview, the researcher could identify the problems that students had encountered in learning vocabulary, namely lack of time, lack of skills in using dictionaries. Among the listed problems, the lack of memory strategies seemed to take the highest consideration and worry from students.

Besides, basing on the results from the initial step, the researchers conducted a teaching plan, in which they provided the students with four sub-memory strategies, namely structured reviewing, using mechanical techniques, using imagery and placing a new word into a context. These strategies were introduced and implemented through the activities designed both in the in-class handouts and at-home requirements. At home, students were required to write down their own diaries about their own ways they dealt with learning the given words by using the four taught strategies.

The research proved that applying the four memory strategies in teaching and leaning vocabulary has improved students' vocabulary retention. Although there was no control group to make a comparison; the consistent training during the scheme helped to prove the results from the test. The improvement that students displayed in the immediate post-test showed better storing of material in the short term and delayed post-test which was the sign of better retrieval in the long term retention. The better performance has not only occurred with the whole group but with almost all members of the group as well.

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