A Teacher's Action Research On ESP Learners' Vocabularies: The Case Of Computer Students.

Mohammad Naghizadeh, Mohammad Hassan Tahririan

SheikhBahaee University

Abstract

In this study, the teacher as a researcher, aimed to tackle the computer students' difficulty dealing with their English book and texts through an action research. First of all, as the first step in action research, their problem has been identified. It was recognized that their problem basically stems from their lack of knowledge in vocabularies. The students were actually following the ESP course and the teacher was teaching as always, but the students as the teacher has been observing and as the pretest indicated failed to gain a good knowledge of their essential vocabularies. Therefore, a need for change has been realized by the teacher. As a result, he changed the way the vocabularies have been presented. That is, an action plan in which five strategies, namely memorizing, Affixes learning, visual images, online learning, and semantic and thematic clustering have been utilized was implemented. A posttest was further given to the students so as to determine whether the plan has been efficient or not. The results indicated that they had indeed a significant progress. That is being so, it is hoped that through sharing the findings of this research, we can help the ESP teacher to overcome the students' problems in learning vocabularies.

Key words: action research, ESP, Specialized vocabularies.

1. Introduction

In ESP courses, one of the important things that the effective teachers should do when encountering with students' problems in learning an aspect of language is action research. In the literature of research, action research has been considered as 'reflective practice'. Here the teacher is researcher as well. According to Burns (2009), action research (AR) involves taking a self-reflective, critical, and systematic approach to exploring your own teaching contexts. One of the main aims of AR, as Burns continued, is to identify a 'problematic' situation or issue that the participants – who may include teachers, students, managers, administrators, or even parents – consider worth looking into more deeply and systematically.

One of the important issues or even problems in general English and ESP courses in particular is the matter of vocabulary learning. Many scholars, as far as I have noticed, have extremely emphasized the importance of the vocabularies. Nation (2001), for instance, considers vocabulary knowledge as an integral part of learners' general L2 proficiency and a prerequisite for successful communication. Richards & Renandya (2002) also considers vocabularies as a core component of language proficiency and something that provides much of the basis for how well learners speak, listen, read, and write.

The importance of vocabulary learning in ESP is addressed by Paltridge & Starfield (202, p.225) through focusing on the learners' need. They claim that teachers and learners need to know that precious classroom time is directly related to their language needs. They should be reading material that contains key ideas and the language of their field and writing using those ideas and language

(Paltridge & Starfield, 2013, p. 116). The learners' language needs is mainly reflected through the special vocabularies they are going to encounter and use in their discipline. Similarly, this idea can be also seen in Woodward – Kron (2008) point. According to that, understanding and using the special purposes vocabulary show that these learners belong to a particular group. Learners need that language to show understanding, "make meaning and engage with disciplinary knowledge" (Woodward - Kron 2008, p. 246).

In every field of study there are some technical and general words the students may encounter in their field of study. Basturkmen (2006), categorizes the words in every field as common core of words and specialized words. Common core words are those words which all learners should know regardless of their field of study. In his view, specialization begins once learners establish that common core. ESP students at the university level have already known some of these core words. However, most of them know very little about many other core words which are frequent and very important in their discipline. Added to this point is the matter of specialized words which make all language as being for specific purposes (Basturkmen, 2006). To help students improve their comprehension, it is very essential to teach these primary specialized vocabularies and their meanings in a way that allows the students to retain them for a long time. Accordingly, one of the main reasons for the students' poor comprehension of their English test is the lack of specialized vocabulary knowledge. That is why vocabularies receive considerable attention in ESP articles and have been the focus of many studies (e.g. Akbari & Tahririan, 2009; Hsu, 2014; Chung & Nation, 2004, among others). However, what makes this research different from other studies is that this research sets out to improve the students' knowledge of specialized and frequent vocabularies through a classroom action research. To put it differently, here the

teacher is researcher as well and feels the students' lack of knowledge in vocabulary as he is teaching; therefore, thinks of conducting an action research that through an action plan solve this problem at his best.

2. Statement of the problem

As mentioned earlier, the main aim of action research and the first step to do that is to identify the problem. Once the problem has been identified then the goal which the researcher is going to pursue will become clear; that is, to find some ways and strategies to handle that problem. A good knowledge of vocabularies plays an integral role for ESP students to comprehend what they read their relevant material in English. Furthermore, the students who study English know that they can learn many things about computer independent of teacher if they have a sufficient word repertoire.

As an ESP teacher, teaching computer in Izeh Azad University, I was teaching the vocabularies through some technical passages prepared in their book by writing the essential and highlighted words on the board and translating them for the students, and then encouraging the students to memorize and repeat them. However, it seems that everything does not go well and there seems to be something the problem with the way I have been teaching. I have heard many students complaining they are unable to remember and use technical vocabulary while working with computer. As a result, they are unlikely to accomplish their daily tasks more successfully since they are unable to comprehend the new messages they got from the computer due to the lack of the lexical knowledge. It seems to me that my observation as a teacher in class and what the students have said about their lack of understanding because of the problems they have in vocabularies and even my initial hunches was not compelling enough to administer

my action plan. To be more confident and to indicate that they really need new practices, their knowledge has to be assessed first. That is why I have brought some massages, which are usually issued by computer for different reasons, to the class and distributed them to the students. They were asked to write the gist of the text in Persian. In the given text some frequent technical words have been used. The understanding of the texts depends mostly on the knowing the meaning of those words. After collecting their paper, the analysis of their answers indicated that most of them really have problems with the technical words. To make sure, all the students, who didn't comprehend the massages, were summoned one by one and asked to explain why they had trouble understanding the text. Most of the answers were:" if I knew this word, I would understand the text". This sort of problem which was also verified by documentary evidence leads me to have my initiate reflective and lends support to the legitimacy of action research.

3. The purpose of the study

After the problem has been identified, it is the time that trough an action research, we come up with some solutions to the problem. To do this, the following questions have been constructed: 1. what problems the computer university students have in learning and remembering the frequent general and technical words have? 2. What can a teacher trough an action plan do to tackle these problems and improve the students' ability?

The aim of the study is, therefore, to provide answer to the questions and consequently, it is hoped that the findings of this study gives a clear picture of how these problems could be solved in ESP contexts.

4. Significance of the study

The significance of this study or what this study serves can be considered from two perspectives: 1. as an action research, the plan of this study can be used as an immediate solution to my current students' problem in learning their essential vocabularies. The students, as mentioned in the statement of the problem, were not able to understand different texts about the computer in English since they have been encountering with many words unknown to them, although they were supposed to know them since they had them in their current syllabus. Therefore, this action research is expected to bring up some amendments in the way they have been learning vocabularies. That is to say, some new practices and strategies that help them not only boost their vocabulary repertoire, but also make them remember the word consistently in the specific situation or context they encounter. 2. On the other hand, the contribution of this study can be made through sharing the findings of this study. The problem of this study is the problem of many ESP students and teachers. In the literature of ESP, many scholars have pointed out the importance of vocabularies for ESP learners and suggested the ESP teacher use different strategies to handle this issue. For instance, Akbari & Tahririan (2009) have asserted that students in an ESP context frequently encounter unknown words in text material and they urgently need to adopt some deliberate strategies to facilitate long-term retention of word meaning.

In sum, it is within the goals of this study to take and use some strategies with the aim of facilitating long term retention of vocabularies and their meaning by the students.

5. Review of literature

Needless to say, now days the language of technology is English, and people who are dealing with technology are definitely aware that knowing English certainly improve their knowledge of technology. For this reason, they make every effort to learn English. However, most of them do not know exactly what kind of English they have to study. As a matter of fact, general English leads them nowhere and in some circumstances they may despair when they come to learn the language. Therefore, a need for destination seems legitimate. By destination, it means something which determines the English they need for their own situation or purpose. Something they need to help them do their daily tasks and enhance their knowledge of science and technology. That is why ESP has become one of the substantial areas of English teaching, and has received increasing attention during these years. Almost all universities all over the world have ESP courses with the aim of teaching the kind of English the students may confront in their field of study. Therefore, one of the important elements in ESP courses is need analysis. What distinguishes ESP from general English, according to Hutchinson & Waters (1992), is not the existence of a need as such but rather an *awareness* of the need. If learners, sponsors, and teachers know why learners need English, that awareness will have an influence on what will be accepted as reasonable content in the language course and what potential can be exploited (Hutchinson & Waters, 1992, p. 53). Therefore, ESP is, as Dudley-Evans & St John (1998) puts it, a tertiary enterprise and learners of ESP are adults who need to know a specific type and amount of English for specific occupational or academic necessities.

Here in this study, we are dealing with the students who are well aware of the significant role that English plays on their field of study. They are also well cognizant of the importance of the words in learning the language for their own purpose. From many of these students' point of view knowing the vocabulary used frequently in computer equals doing their daily task and acquiring lots of knowledge about computer.

Choosing appropriate material for teaching after the needs have been determined is another important issue in ESP. The material chosen for the course should comprise all the vocabularies the students need and present them in a way the students find no difficulty learning them. In other words the material should cover all the immediate needs of the students. Therefore, the important factor in determining the kind of material is need analysis. To choose the appropriate material, An ESP teacher has a wide range of choices at his disposal. Therefore, he has to do his best to find the material that best matches the students' needs. For the students of this study, *Special English for the students of Computer written by Manoochehr Haghani* is chosen for the ESP course, because it nearly meets the kind of English the student need to learn.

Another salient feature in ESP is *evaluation*. Once the needs have been identified, the learners are expected to meet them. Here the teachers use evaluation to see to what extent the needs have been fulfilled. If the teacher teaches, but the students do not learn, there must be something the problem with the ESP course. The needs might not be based on the students' abilities, perhaps the material or syllabus is not appropriate, or the methodology has to be changed. Therefore, in ESP lots of evaluation must be administered. Hutchinson and Waters (1989) claim that evaluation is a matter of judging the fitness of something for a particular

purpose, and this looking for the fitness of something for a particular purpose is salient in ESP because in ESP everything including materials, course, syllabus and so on should fit the learners' needs and specific purposes. Two levels of evaluation according to Hutchinson and Waters (1989) have been brought into prominence: 1. a learner assessment: here the students' performance at some strategic points, for example, at the beginning or at the end of the course, needs to be assessed. In ESP this kind of assessment takes on greater importance, because ESP is concerned with the ability to perform particular communicative tasks. 2. Course evaluation: here the ESP course itself should be evaluated to see whether the course objectives are being met (Hutchinson and Waters, 1989, p. 144). One type of assessment that the teacher may do in ESP courses with the aim of showing how far the students have progressed toward the goals of syllabus and what remains yet for them to achieve is the achievement assessment. This kind of assessment can be done any time in the course. The analysis of the assessment can clearly demonstrate what problems the students have regarding different aspects of the language they are studying and further help the teachers take appropriate action to solve the problems. And this is what we have in action research generally and this study particularly.

One of the important aspects in ESP is the specialized, technical, sub technical or semi-technical words that are by far more frequent in one field than others. In other words, some words belong to one particular field or discipline. And, the students who are studying this field of study are expected to have sufficient knowledge of those words so as to understand the texts, articles, books or in sum the language of that field. According to Nation (2001, p.187), it is wise to direct vocabulary learning to more specialized areas when the learners have mastered 2000-3000 words of general usefulness in English. However, it is

difficult to detect to what special area a word belongs, the lack of word knowledge in what Nation called specialized area is undoubtedly one of the major reasons for the students' failure in reading comprehension; that is why there have been many studies aimed to throw light on this issue of language learning in general and ESP in particular; furthermore, many scholars have emphasized teaching vocabularies through useful strategies (e.g. Atay & Ozbulgan, 2007; Cohen (1987), Rodriguez & Sadoski, 2000; Sagarra & Alba, 2006; among others).

In a study conducted by Dang and Webb (2o14), through the analysis of vocabulary in 160 lectures and 39 seminars from four disciplinary sub-corpora of the British Academic Spoken English (BASE) corpus: Arts and Humanities, Life and Medical Sciences, Physical Sciences and Social Sciences, it was found that to achieve 95% and 98% coverage of academic spoken English, a larger vocabulary size is needed. They concluded that to be able to understand academic spoken English, knowing just the vocabulary for general spoken English is not sufficient for the learners. To put it differently, ESP learners need much more vocabularies in order to achieve comprehension as compared with general English learners. This finding, however, should be taken with caution for several reasons. Firstly, although some ESP learners have to know many technical words, they do not need to know many general words which are less frequent in their discipline. As an instance, a student in medical science does not require knowing about different kinds of clothes. Moreover, the size of vocabularies for different ESP students is different. To do his job, a pilot needs by far more limited size of words as compared with a politic student who has to know a large number of words. Therefore, the important issue in teaching the vocabularies to ESP learners is the fact that it is really difficult to recognize exactly what words the ESP learners need in order to fulfill their daily tasks. In other words, what factors have to be taken

into account in presenting the words to the students. Knowing just the technical words, as far as I am concerned, is not sufficient for the ESP learners to use the language in their expertise. They have to know sub technical or semi-technical and even some frequent general words. On the other hand, it is not actually possible to present all the vocabularies during an ESP course. What is more, sometimes what we call a general word might be considered as a technical word in some discipline like the word resistance in electronics. One factor that many scholars consider as an important criterion in presenting the vocabularies is the frequency of the words. As a result, for different disciplines, many frequency lists of words have been developed by different scholars. In 1994, Sutarsyah, Nation and Kennedy have developed an English word list for Economics learners. For engineering learners the recent well known English word list has been produced by Mudraya (2006). There are many other word lists for ESP learners, but for the reason of scope they are not included here. However, despite the abundant word frequency lists for different disciplines, unfortunately no frequency list has been found in the computer science. Therefore, on the basis of the present syllabus they are studying now, the vocabularies to be presented have been identified. Their syllabus from which the words are taken is *Special English for the students of Computer written by Manoochehr Haghani*. This book consists of fifteen units. Each unit is about a topic related to computer. In each unit some technical or semi-technical words are highlighted. Added to these words are some other general words that are frequently used in the texts concerning computer. In order for the students to comprehend each unit, having a good knowledge of these words are necessary.

Finding appropriate ways to teach the vocabularies ESP learners need is another concern for ESP teachers. Teaching vocabularies through task- based

approaches to boost ESP learners' vocabularies was done by Cubillo and Brenes (2009) and Sarani and Sahebi(2012).

Cubillo and Brenes (2009) have used the task-based instruction in an ESP course in the computer center at the University of Costa Rica to help learners infer the rule of the superlative form of adjectives in English. On the other hand, Sarani and Sahebi(2012), In an attempt to investigate whether task-based approach is appropriate for vocabulary development in an ESP course tried to conduct a research . Teaching of vocabulary for the BA students of Persian literature in Birjand University of Humanities in an ESP course has been done using the paradigm of task-based language teaching. The study aimed to see whether there is any significant difference between traditional ways of teaching technical words and task-based approach or not. The participants were divided into two groups of control and experimental. The traditional ways of teaching vocabularies has been used for the control group, and the experimental group was taught using task-based approach. At the end, the findings showed that the students who received the task-based approach teaching were more successful in learning technical vocabularies compared to the students who were taught through the traditional ways. Furthermore, this study also compared the performance of males and females in the experimental group. The results showed that the male learners outperformed the female learners. On the whole, this study lent legitimacy to the effectiveness of the task-based approach for the ESP students in order to learn the technical vocabulary. Although this study provided documentary evidence for the efficiency of the task- base approaches in ESP courses, it should also be borne in mind that since the focus in task based approach is more on doing the task and consequently less attention is paid to the direct teaching of vocabularies, the students may have difficulty remembering the vocabularies later and as the author of this paper

observed during the teaching, long term retention is rarely apparent. Therefore, it calls for some strategies in which the focus is also on the direct way of teaching vocabularies.

About teaching vocabularies two general approaches have been mentioned by Nation (2001): intentional, where activities are aimed directly at learning lexical items, such as using word lists and cards; and incidental, where learning vocabulary is a by-product of activities not primarily focused on the systematic learning of words, such as reading (Nation 2001, p. 231). Nation (2001) himself believes that there must be a room for both approaches in teaching vocabularies. However, in the students' existing book the focus is more on the incidental learning and the students are supposed to comprehend the reading passages more as compared with learning or internalizing the vocabularies. Lots of students have been complaining very often that since the book itself and the reading passages are very lengthy, they have trouble noticing the individual words; and that is why they do not learn them or even if they learn them they will forget them easily. Therefore, in this study the author made attempts to use more intentional techniques in his action plan. What lends legitimacy to our endeavor is the claim made by Laufer (2003). In his study about the vocabulary acquisition of second language, she has demonstrated that intentional learning may in certain cases prove to be more efficient than incidental/contextualized vocabulary learning, since incidental learning requires exposure to rich L2 input environments as well as extensive reading and listening, which delays the whole learning process.

6. Methodology

6.1. Participant

As stated before, the participants of this study were a class of 30 males and females studying computer at the Izeh Azad University. They were studying *Special English for the students of Computer written by Manoochehr Haghani* as their syllabus. It is also mentioned that the aim of the study is to enhance the vocabulary knowledge of the students so that the words possibly cannot act as a hindrance in their comprehension while working with or studying about computer.

6.2. Instruments and data collection

The first instrument used in this study was mentioned before as well. The students were given some computer texts and they were asked to translate them into Persian. It aimed to see whether they really have problems understanding in comprehension due to the scarcity of vocabulary knowledge or not. The results indicated the students' needs of learning the vocabularies. Another instrument used in this study was a pilot test for the pretest. To make sure that the instructions and questions are clear, and ensure that the participants of the study will find no difficulty understanding the question items of the test , and consequently they respond appropriately the pretest, which we will talk about later in this section, has been piloted by another computer class in that university. In addition a pretest was used in this study to gather data. The pretest contained 30 questions. In each question the students were supposed to translate a text in Persian or at least write the main point of the text. They were also asked to write the meaning of an underlined and highlighted word, which we consider as the cause of problem in comprehending the text. The questions were devised in a way that it was rather difficult for the students to guess the meaning of the word from the whole text. Moreover, the vocabularies chosen in the questions were extracted from their syllabus up to the lessons they have studied so far. The reliability of the pretest was

also estimated through Cronbach's alpha coefficient and it was /77. The time given for each was 60 minutes. By the way, after the construction, the test was examined by three experts for its content validity.

The resulting mean of the pretest was 7.6 out of 30. This mean has indicated that students really have problem dealing with English vocabularies an It demands planning an action research in order to cope with the problems. After planning the action, a post test will be employed to check whether the action is effective or not. Meanwhile, it is worth mentioning that one of the problems that the students have in using the words is the pronunciation of the words. However, this aspect of the word can be assessed by the pretest. But, in action research it is going to be taken into consideration.

7. Plan of action

Once the problem with the students' learning in the classroom has been identified, a plan should be developed to tackle that problem. As mentioned before the participants of this study were the BA students of computer studying at Izeh Azad University. The book they were studying was Special English for the students of Computer. Despite passing nearly half of the course, most of them were not able to understand many massages the computer sends in a specific situation. As I observed and the students themselves asserted their main problems related to the lack of knowledge in vocabulary. The documentary evidence mentioned earlier also supports this claim. Therefore, as a teacher and researcher as well, I have decided to handle this problem trough an action plan. The success of this action plan, if happen, could provide the ESP teachers with a good knowledge of how

they teach the vocabularies, which the students consider as a panacea for their comprehension problems.

The reason why I have selected the computer students is that there is a close and intertwined relationship between English and this science to the extent that the students themselves think that the more English they know, the more they can learn and the better and the more efficiently they can work with computer.

Bearing what have been mentioned above in mind, I have selected some strategies and procedures to include in my plan. As Brown (2000) pointed out teachers should take advantage of different approaches and techniques and combine them to help learners improve their skills. In what follows these strategies will be discussed in details:

7.1. Memorizing

By memorization here it means repetition and practicing to remember a word. Some strategies are used for the students so that they can store the words in their memory and retrieve the vocabulary from long term memory into short term memory easier. Here the students repeat and practice all aspects of the words such as their pronunciation, spelling, occurrence, and so that they can work more efficiently on their meaning when they encounter them in a real situation. This is a very simple way that is often used in teaching contents by many students. This way was also used before conducting the action research, however, here just some words, those which seem to be difficult to be learned in other ways, are taught in this way. And the students don't occupy their memory with a lot of words in a short space of time.

7.2. Affixes learning

There are many words in computer science, such as *portable, recordable, non-volatile, automation, digitize, accumulator, and* …. That trough teaching the meaning of suffixes or prefixes added to them can be learnt and remembered easier. Therefore, the students can expand their vocabulary repertoire by using affixes like *un, non, er, ize, able, ish, ion, etc.*

7.3. Visual images

It is a well-established idea in psychology that we can remember the item easier when they are presented with their picture simultaneously. This point and the usefulness of visualization in retaining the vocabularies in our memory are clearly apparent in a statement suggested by Nattinger (1988). It claims that the words in our mental lexicon are tied in our memory not only by meaning, form and sound but also by sight. Gairns and Rodman (1993) also noted and claimed that it is easier to conjure up a mental image of a concrete item than an abstract one. Many technical words in computer are concrete words such as *juckeboxes, image scanner, zip disk, PC card hard drive, parallel processing, and* ... that can be taught using wall charts, flash cards, pictures and other visual images.

7.4. Online learning

In the precedent ways of teaching vocabularies the students use the words to learn more about the computer and technology. But here the students use the technology and computer to acquire the words. In this way of teaching the students are encouraged and motivated to use the vocabularies they learn while they are communicating online with others and at the same time learn some other words from others. In this way the general words which are usually frequent in computer could be utilized. This way could also foster the students' autonomy and motivation. It increases autonomy since the students here are responsible for what they learn. And their motivation is enhanced since this way of teaching is related to their field of study.

7.5. Semantic and thematic clustering

Semantic clustering or 'lexical sets' as defined by Gairns and Redman (1986), refers to groups of words such as *ear, eye, nose, mouth* which share certain semantic and syntactic similarities. Psychologically speaking, It is supposed that by clustering the words together, it is easy for the students to learn and remember the words faster. Gairns and Redman (1986, p. 31) believe that grouping words according to their semantic features can provide a useful framework for the learner to understand semantic boundaries: to see where meaning overlaps and learn the limits of use of an item. Thematic clustering, on the other hand, is the clustering of the words in another way. According to Fillmore (1985), words might be subconsciously organized in accordance with their participation within certain 'frames' or 'schemas', concepts which segmentize a speaker's background knowledge. This organization does not need to be done based on the semantic features and the words from different part of speech can be put in a cluster. Accordingly,

words like *water, swim, blue, and fish, green* and *wet* can form a group. The words in such groups revolve around a thematic concept, in the already-mentioned example, *water* is the case. Thematic clustering is based on the assumption that schema-related material is more easily learnt than schema-unrelated material (Brewer & Nakamura, 1984). In computer many words are thematically related and making abundant groups of words accordingly is not a formidable task.

8. Putting the plan into action and results

The action plan has been implemented in five sections. For each strategy in the action plan a section has been allotted. After the application of the plan a post test was given to the students in order to check whether the action is efficient or not. The post test was also piloted before given to the students. The reliability of pretest has been calculated and it was 75. To examine the content validity of the post test, it was given to three experts as well. After analyzing the tests the following results have been obtained. The results of the pretest are mentioned first.

The descriptive statistics for pretest are manifested in the following table. The highest and the lowest scores, mean, and standard deviation are given:

Table 1. Descriptive Statistics for pretest

	N	Minimum	Maximum	Mean	Std. Deviation
pretest	25	2.00	15.00	8.4400	3.44093

Table 2. Descriptive Statistics for posttest

	Paired Differences					t	df	Sig.(2-tailed)
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
				Lower	Upper			
Pair 1 pretest - posttest	-5.92000	4.64507	.92901	-7.83739	-4.00261	-6.372	24	.046

Now the results of the post test, which was administered after the action plan, are given in table 2:

In addition, to determine whether the difference between the two mean is significant or not a matched t-test has been used and the results are shown in tabl. 3:

Table 3. Matched t-test

	N	Minimum	Maximum	Mean	Std. Deviation
posttest	25	8.00	21.00	14.3600	3.53412

Therefore, as the t-test indicates clearly the difference between the results of pretest and post test is quite significant. As a result, the action plan used in this study was efficient.

9. Discussion

In the literature of ESP, it is has been very often pointed out that vocabulary in ESP plays a significant role. And without a doubt, the main reason for the poor comprehension of is the lack of knowledge in vocabularies. That is being so, the aim of this study was to help the computer students, who have been following the ESP course in Izeh Azad universities, improve their vocabulary knowledge in their field. The reason for the study was that the way the teacher was already teaching failed to bring up enough improvement in the students' vocabulary knowledge. Therefore, a need for a change in the way of teaching has been realized. The teacher has decided to do this through an action research in which a plan has been devised. In the application of the plan some strategies have been employed. The results indicate a great progress in the students' vocabulary learning. Apart from the result of this study, the students themselves were very contented with the plan, and also, their knowledge has been manifested during the following sections. The main claim that can be made on the basis of this study is that changing the way of teaching, especially in ESP contexts and teaching vocabularies, makes a big difference. By and large, the results lend support to the efficiency of the plan; thus, many students and teachers can benefit from them. Although, the strategies or techniques used in these studies are not obviously the only strategies to teach vocabularies, they are nonetheless some useful ways, suggested by the findings of this study, which can be used by ESP teachers coping with their students' vocabulary problems.

Like other studies, this study has its own limitations. First of all, some other factors except the plan might be at work influencing the results of the study. The

results are also limited to just the students of the computer since some strategies used in the plan might be appropriate just for those students.

10. Conclusion

In this study a plan consisting five techniques has been used in order to help computer students improve their long term vocabulary learning. These five strategies glossed as follows: *memorizing, Affixes learning, visual images, online learning, and semantic and thematic structure.* On the whole, the findings of this study were regarded as the evidence of the plan being beneficial.

In addition, the new, enjoyable, and useful techniques and interesting activities brought to class coupled with comprehending the gist of the message they read and doing their daily task successfully due to knowing the words in English can increase the students' motivation and develop a positive attitude toward learning English.

Finally, although this study has its limitation as mentioned before, I believe it can be a trigger for further teacher's study to have an action research when encountering with the student difficulties in any aspect of language.

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