

An investigation of the effects of TICK- 8 Mnemonic Technique in Learning Vocabulary among Iranian EFL Learners

By

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Abstract

This study aimed to study the effects of Tick-8 mnemonic technique on Iranian English language learners' retention of vocabulary items. To do so, 40 Iranian English language learners' at intermediate level were randomly selected for the study. They were randomly divided into one experimental and one control group. In order to get assurance as to the homogeneity of the learners they were pre-tested and a same test was repeated as post-test after 9 weeks. Both groups were taught about 360 vocabulary items. These vocabulary items were taught with mnemonic techniques (Tick-8) to the experimental group while control group did not receive any technique. Detailed analysis revealed that, there was a significant difference between experimental and control groups in retention of vocabulary items.

Keywords: *Vocabulary Learning Strategies, Mnemonic Strategies, Tick-8 Technique*

1. Introduction

The relationship between vocabulary size and overall linguistic ability may differ from one language to another. In English there is a close relationship between how many words you know, as measured on the standard vocabulary tests, and how well you perform on reading tests, listening tests, and other formal tests of your English ability. Vocabulary size in English strongly limits the sorts of texts that you can read with ease: this might not be case in other languages, and this would make it unnecessary for teachers to invest in simplified readers. Advanced learners of English tend to exhibit richer vocabulary in their writing than less advanced learners do. English has very different vocabulary registers for special areas of discourse and this makes it important for learners to acquire academic vocabulary, legal vocabulary, the vocabulary of business English and so on. The general point here is that the sheer size of English vocabulary has a very marked effect on the way we teach English, and severely constrains the level of achievement we expect of learners. Most people agree that fluent English speakers need very large vocabularies, that it makes sense to pace the learning of this vocabulary over a long time and that we should rely principally on the learners own motivation to get them to this very high level of vocabulary knowledge. A large number of languages are much simpler than English as far as their vocabulary structure is concerned, and it would be wrong to assume that research finding based on English will generalize automatically to these languages. This means that teaching methods that take English vocabulary structure for granted will not always be the best way for us to approach the teaching of vocabulary in other languages. This comparison underlies the importance of having a well-thought-out plan for helping learners with English vocabulary. The base for this plan is making a distinction between high-frequency and low-frequency and of the strands and strategies words, which are the means of dealing with these words (Schmitt2002). The best means of achieving good vocabulary learning is still unclear, partly because it depends on a wide variety of factors and so, it is perhaps not surprising that teachers and learners have often been unsure of the best way to pursue it, especially as textbooks and syllabuses have typically been negligent in providing clear description and guidelines (De Groot, 2006). Despite the abundance of research on vocabulary acquisition that has been conducted by linguists, psychologists and theorists of L2 acquisition, there is still no generally accepted theory of vocabulary acquisition.

This study attempts to introduce more effective vocabulary learning strategy to EFL learners (especially Iranian EFL learners) through an investigation of the effects of Tick-8 mnemonic technique on Iranian EFL learners' vocabulary learning.

2. Literature Review

The classification of vocabulary learning strategies, consideration has to be given not only to the process of learning vocabulary but also to the first and the second language, to the characteristics of the learners, and to the focus of the research concerned. In fact, no classification is perfect, and any individual strategy may fall into one category or another, depending on the aspect in focus. What is beyond dispute is that strategies may broadly be divided between those that are more directly related to individual learning tasks and entail direct manipulation or transformation of the learning materials, that is, the cognitive strategies, and those that are connected with the learning process, planning, monitoring of comprehension or production while it is taking place, and self-evaluation after the learning activities have been completed, that is, the metacognitive strategies (Brown & Palniscar, 1982, as cited in OMalley & chamot, 1990).

Schmitt (1997, 2000), however, suggested two categories of L2 vocabulary learning strategies: discovery and consolidation strategies. The former referred to determination and social strategies whereas the latter include social, memory, cognitive, and metacognitive strategies. In fact, no classification is perfect, and any individual strategy may fall in to one category or another, depending on the aspect in focus. What is beyond dispute is that strategies may broadly be divided between those that are "more directly related to individual learning tasks and entail direct manipulation or transformation of the learning materials," that is, the cognitive strategies, and those that are connected with "the learning process, planning for learning, monitoring of comprehension or production while it is taking place, and self-evaluation after the learning activities have been completed," that is metacognitive strategies (Brown & Paliscar, 1982, as cited in OMalley & Chamot, 1990). Another vocabulary learning taxonomy, illustrated by Nation (2001), which its fundamental feature is that the types of strategies refer to various aspects of vocabulary learning. In other words, this taxonomy separates the elements of vocabulary knowledge from vocabulary sources and learning processes. The strategies of planning encompass decisions about which lexical items to attend to, as well as how to focus attention and how often to give attention to the item. Learners need to know which vocabulary they need, where they can find information, which aspect of knowledge is required in a particular.

A-Planning: choosing what to focus on and when to focus on it. Choosing words, choosing the aspects of word knowledge, choosing strategies, planning repetition

B-Sources: finding information about words. Analyzing the word, using context, consulting a reference source in L1 or L2, using parallels in L1 and L2

C-Processes: establishing knowledge.

Noticing, retrieving, generating Taxonomy kinds of vocabulary learning strategies by Hatch and Brown (2000):

A- Encountering new words (with sources of new words being reading, watching TV, listening to radio, conversation with native speakers, textbooks, word lists, dictionaries, etc.

B- Creating a mental picture (visual, auditory or both) of word form (e.g. relating a new word with L1 words or other FLs with similar sounds, using phonetic script, relating to already acquired English words that sounds similarly).

C- Learning the words meaning (e.g. asking the native speaker for the meaning, creating a mental image of the meaning, guessing from context).

D- Creating a strong linkage between word form and meaning in the memory (regardless of the memory strategy used- as long as it is used).

E- Using words (in example sentences, collocations, various contexts, conversations, etc.).

All five steps are indispensable in the vocabulary learning process, even if at a minimal level. The extent to which a learner engages in each step is directly dependent on the learning goal. For example, if the goal of learning is passive, i.e. receptive knowledge of certain vocabulary, the fifth step is irrelevant. On the other hand, using words is no guarantee of long-term retention. Hatch and Brown (2000) see the steps as connected 'sieve'. The greatest number of lexical items enter the first sieve (the first step), but only a limited number of them pass through it into the next sieve, or the next step. The process is repeated through all sieves, so that the retained number of lexical item is notably smaller than at the initial input. The greater the number of lexical items that the learners manages to transfer from one sieve to the other, to richer her or his vocabulary is.

Mnemonic Strategies

Given that learning may take place intentionally or incidentally, a distinction has often been made between strategies that involves the learners more deeply (deep processing) and those that do not involve the learners deeply or do so to a much lesser extent (surface processing). Although evidence from cognitive psychology indicates that activities that require a deeper, more involved manipulation of information are more conducive to learning than those that do not (Craik & Tulving, 1975). The word *mnemonic* is derived from the Greek word *Mnemosyne*, referring to the ancient Greek goddess of memory. The use of mnemonic dates back to 500 B.C (Yates, 1966). The first used mnemonic device was an earlier form of the modern day method of loci and since then, numerous other devices have been developed (Higbee, 1987). According to Solso (1995), mnemonics are techniques or devices either verbal or visual in nature, that serve to improve the storage of new information contained in memory. Mnemonics have been proven to be extremely effective in helping people to remember things (Bulgren, Schumaker & Deshler, 1994; Mastropieri and Scruggs, 1989). If material is presented in a way which fits in or relates meaningfully to what is already known, then it will be retained for relatively long period of times and thus retrieval through verbal or visual clues becomes quite easy. In other words, by using mnemonic strategies, teachers can relate new information to information students already have stored in their long-term memory. For vocabulary learning, they are used to relate the word to some previously learnt information, using some form of imagery or grouping (Mastropieri & Scruggs, 1991). Thompson (1987) similarly acknowledging the usefulness of mnemonic devices by stating that they can help learners learn faster and recall better by integration of new material into existing cognitive unites and by providing retrieval cues. Mnemonic devices are proved to be effective in all ages. They are, however, more useful for low level students because they are involved mostly in activities requiring them to remember and recall information (Levin, 1993). Mnemonic devices have been differently classified by different scholars. Thompson (1987), for example, arranges mnemonic strategies into five classes; linguistics, spatial, visual, physical response and verbal methods. Oxford (1990), on the other hand, identifies four major classifications namely, creating mental linkage, applying images and sounds, reviewing well, and employing action. While Baddeley (1999) believes that mnemonic devices are classified into visual imagery strategies and verbal strategies. Despite the mentioned classifications Zarevski (1994), classified mnemonic techniques in two categorizations: 1) *Verbal mnemonics*: Reduction, elaborated coding, semantic elaboration, rhyme and rhythm 2) *Visual mnemonics*: Method of spatial page organization 3) Mixed mnemonics process mnemonics: Association mnemonics, rituals, process mnemonics.

3. Tick-8 Technique

Tick-8 is a kind of mnemonic strategies which involves learners more deeply in the process of learning. With a selective learning process these techniques allow learners to learn what they need to learn, when they want to learn it. Using the review scheduling system allows learners to maintain proper learning that minimizes the amount of time required to complete and fill in the squares in Tick-8 and will enhance the process of learning. Using squares signing take place without effort but not incidentally. Tick-8 technique has been designed with a very simple repetition algorithm according to Ebbinghaus' hypothesis: 1) better memory representation (e.g. with mnemonic techniques) and 2) repetition based on active recall (esp. spaced repetition). The learning curve described by Ebbinghaus (1968), refers to how fast one learns information. The sharpest increase occurs after spaced repetitions. Like the forgetting curve, the learning curve is exponential. The forgetting curve hypothesis is the decline of memory retention in time. A related concept is the strength of memory that refers to the durability that, memory traces in the brain. The stronger the memory, the longer period of time, that a person is able to recall it. A typical graph of the forgetting curve purports to show that humans tend to halve their memory of newly learned knowledge in a matter of days or weeks unless they consciously review the learned material. In 1885, Hermann Ebbinghaus extrapolated the hypothesis of the exponential nature of forgetting. The following formula can roughly describe it: $R = e^{-\frac{t}{S}}$ where R is memory retention, S is the relative strength of memory, and t is time. Hermann Ebbinghaus ran a limited, incomplete study on himself and published his hypothesis in 1885 as *Über das Gedächtnis* (later translated into English as *Memory: A Contribution to Experimental Psychology*). Ebbinghaus studied the memorisation of nonsense syllables, such as "WID" and "ZOF" by repeatedly testing himself after various time periods and recording the results. Ebbinghaus hypothesized that the speed of forgetting depends on a number of factors such as the difficulty of the learned material (e.g. how meaningful it is), its representation and physiological factors such as stress and sleep. He further hypothesized that the basal forgetting rate differs little between individuals. He concluded that the difference in performance (e.g. at school) can be explained by mnemonic representation skills. Tick-8 despite being a kind of memory strategy according its theoretical base, have cognitive and metacognitive characteristic according its applications. Memory-related strategies help learner link one L2 item or concept with another but do not necessarily involve deep understanding. Various memory-related strategies enable learners to learn and retrieve information in an orderly string, images (picture of the word itself or the meaning of the word), a combination of sounds and images, body movement, mechanical means, or location.

Repetition, practicing, and recognizing are among basic characteristics of Tick-8 technique which enable the learner to manipulate the language material in direct way which make them related to cognitive strategies. Despite the mentioned characteristics, arranging a study space and schedule, monitoring mistakes, and evaluating the learning process during the learning time are the main factors that learners are encountered when they are using these techniques which related them with metacognitive strategies.

Research Question

This study however adapted on Tick-8 (Sohrabi & Zahedi, 2009) mnemonic strategy. To this end, it tries to answer the following research question:

1. Does Tick 8 technique have effect on Iranian EFL learners' vocabulary knowledge?

Research Hypotheses

In the present study the researchers' focus is on Iranian EFL learners' vocabulary learning. This study tested following hypothesis by asking experimental group learners use independent variable of this study (Tick-8 technique) and attempts to identify its effects on retention of new words, among Iranian EFL learners as dependent variable of the study.

- 1- Tick-8 technique does not have any effect on Iranian EFL learners' vocabulary knowledge. (H0)
- 2- Tick-8 technique has effect on Iranian EFL learners' vocabulary knowledge. (H1)

4. Method

This part includes steps are taken during the study.

Subjects

The participants in this study were 87 female EFL learners (their L1 was Persian) participants in this study had a different age from 21- 28. They were at intermediate level. The study was conducted at Simin English teaching Institute in Talesh (in Iraan). 40 learners were chose through simple randomization (flip of a coin) and then they were divided into three groups randomly (flip a coin) one experimental group and one control group. The experimental group was called T-8 Group. The learners received three hours of English language instruction in two sessions 2 days a week. In order to get assurance as to the homogeneity of the learners they were pre-tested on their level of proficiency in vocabulary knowledge and the results indicated that they were homogeneous.

The researcher herself was the teacher of two groups and taught 360 vocabulary items to all the participants in two groups during the treatment. Words, however, taught in a same way in the classroom while the teacher read the words and then gave their meaning to Persian but experimental group received additional treatment rather than control group.

Instruments and Materials

Two groups of participants completed a pre-test and a post-test on vocabulary knowledge. The pre-test was administered before the treatment sessions. The same test was repeated as post-test nine weeks after the pre-test. The interval length (nine weeks) was long enough for the participants to forget the tests, because the same test was utilized in both tests. The test-retest reliability estimate for these tests indicated that the all of instruments were reliable (Table 3.1). The content validity of these tests also was confirmed by three professional test-takers at Ph.D. level in Simin language teaching institute.

Table 5.1. Reliability Statistics

Cronbach's Alpha	N of Items
.878	5

The vocabulary items used in the study were 360 items that were selected from 504 Essential Words Tick-8 book (Sohrabi & Zahedi 2009). These words were selected according to the words arrange in Tick-8 book. The words in this book are not arrange with an alphabetic order so, researcher in order to make a similar word list for all the groups forced to select vocabulary items respect to the design of the Tick-8 book. Thus, these words selected from lesson one to lesson 18. The researcher selected 360 vocabulary item, due to the time was devoted to the study. Three Multiple-choice item tests and one Matching test were selected as instruments of this study, which through them subjects were asked to select answer from several options for the given word. These kinds of tests were selected for the study with respect to the subjects' professional level. They were at intermediate level so, using some test such as reading comprehension or cloze passage tests that are contain a large number of vocabulary items may make them confused. Therefore Multiple-choice item and Matching Tests were selected by the researcher. The Multiple-choice test was contained 60 questions, 20 Fill in the Blank Tests, 20 Tests on Synonyms, and 20 Tests on Antonyms. The Matching Test also, contained 20 questions. All of tests taken from Rahnama TOEFL book (Teimori, 2008) published by Rahnama Press. Thus the total number of questions was 80 and one point awarded to each correct answer.

Tick-8 technique was selected material for this study. During this study participants' in T-8 group received Tick-8 technique in order to learn the given word list (360 selected word) according to this technique. Tick-8 was introduced to T-8 group in a-10 minute introduction in the first session.

Procedure

The entire study took 10 weeks, and all the participants were taught 20 vocabulary items each session while, all groups of participants were taught all words. In the second day of the first week all the participants received the word lists. The participants in the experimental group (N=20) received their specific techniques. 20 Tick-8 books were prepared for the experimental groups in order to practice stages of the study as mentioned in treatment section. The participants in the T-8 group (N=20) received TICK-8 books then students in this group familiarized with their instruction in a-10 minute introduction. The participants in the control group did not receive any technique. The total sessions of the study were 20 sessions (two days a week) while one session devoted to pre-test and one session devoted to post-test, therefore, the total sessions that devoted to the treatments were 18 sessions. Each session took one and half an hour out of which 30 minutes were devoted to vocabulary teaching.

Treatment

In this study the usual way of vocabulary teaching was used for two groups. The teacher first read the word items and then gave their meaning to all the groups. 20 word for each session. Despite the same type of teaching way to two groups, while T-8 group received their treatments. 20 Tick-8 books were given to 20 participants of T-8 experimental group while control group did not receive any treatment.

Principles of accumulation vocabulary according to Tick- 8 book for T-8 group: Each page of the Tick-8 book consists of 20 vocabularies (their vocabularies arranged according to 504 absolutely essential words book for EFL learners). The meaning of these vocabularies is mentioned in the back of the same page and there are 8 squares under each vocabulary. As Zahedi (2009) claimed "This is sufficient participants only looked at each word in the first day because learners whom use this technique do not need to memorize word items, because learning take- place for them only through reviewing. In the second day squares that had been correctly answered are signed with "Tick" sign for the first square from the left side. On the contrary if they did not understand the meaning of them they must use "F" sign for the first square from the left side and then they can look at the meaning of the missing words. With these principles, they reviewed the rest of the words. After 8 days they marked all the 8 squares with "Tick" or "F" signs. Participants in this group reviewed 20 items per session in the classroom and then continued reviewing the instructions at home. The teacher each session checked their book in order to get assurance learners used their instructions at home (Zahedi, 2009).

5. Analyses and Results

The aim of this study is to explore whether Iranian EFL learners' vocabulary knowledge are effected by Tick-8 technique. In this section, the results of the data collected during the study and the statistical analyses will be presented. Firstly, the descriptive statistics for each test and scores will be presented. Secondly, in the Tables below "M" gives the mean, "HS" and "LS" gives high and low scores, df indicates the degrees of freedom that shows the differences between the sums and "SS" shows the sum of scores.

Research Question - Does Tick-8 technique have any effect on Iranian EFL learners' vocabulary knowledge?

Scores

Respect to the research question one, the scores that are needed for answering the question are as follows: the obtained scores from two, T-8 and control groups from the pre-test to the post-test while, the results

of each four kinds of given test will be presented by descriptive and inferential statistics. The result will be compared in order to answering the research question.

Descriptive Statistics

Tables (6.1-6.5) show the descriptive statistics results for Fill in the Blank Test, Test on Synonyms, Test on Antonyms and Matching Test. These tables contained of Mean scores, Standard deviation, High scores and Low scores of subjects from the pre-test to the post-test.

Table 6.1. Descriptive Statistics for Fill in the Blank Test for T-8 and Control groups

Group	Pre-test				Post-test			
	M	SD	HS	LS	M	S	Hs	Ls
Tick-8	10.7	.851	12	10	18	1.899	20	15
Control	11.50	.759	14	10	12.50	.88	14	11

According to the descriptive statistics for Fill in the blank test, the results showed a gain for both groups. (Table 6.1)

Table 6.2. Descriptive Statistics for Synonyms Test for T-8 and Control Groups

Group	Pre-test				Post-test			
	M	SD	HS	LS	M	SD	Hs	LS
Tick-8	10.95	1.099	13	9	17.651	.872	20	15
Control	11.15	.98	14	9	12.90	.85224	14	11

According to the descriptive statistics for Test on Synonyms, both groups showed a gain from the pre-test to the post-test (Table 6.2).

Table 6.3. Descriptive statistics for Antonyms Test for T-8 and control groups

Group	Pre-test				Post-test			
	M	SD	HS	LS	M	SD	HS	LS
Tick-8	10.50	1.43	12	8	17.25	1.997	20	14
Control	10.65	14	9	10	12.8	1.15	14	10

According to the descriptive statistics for the Test on Antonyms, both groups showed a gain from the pre-test to the post-test (see Table 6.3).

Table 6.4. Descriptive statistics for Matching Test for T-8 and control groups

Group	Pre-test				Post-test			
	M	SD	HS	LS	M	SD	HS	LS
Tick-8	0.9	.887	13	17.5	17	2.438	20	15
Control	11.00	.35355	14	10	13.5	.82558	14	10

According to the descriptive statistics for Matching Test, both groups showed a gain from the pre-test to the post-test (Table 6.4).

Table 6.5. Descriptive Statistics for Total Scores for T-8 and Control Groups

Group	Pre-test				Post-test			
	M	SD	HS	LS	M	SD	Hs	LS
Tick-8	10.95	1.099	13	9	17.651	.872	20	15
Control	11.15	.98	14	9	12.90	.85224	14	11

Table 6.6. Dunnet t- test (>control)^a

Dependent Variable	(I) Group	(J) Group	Mean Difference (I-J)	Std. Error	Sig.
pretest	2.00	1.00	.36250	.54674	.386
	3.00	1.00	.20000	.54674	.513
posttest	2.00	1.00	4.81250*	.45140	.000
	3.00	1.00	2.55000*	.45140	.000

*. The mean difference is significant at the 0.05 level.

So, according to the findings of this study, the research question can be answered here: Learners in the Tick-8 group outperformed learners in the control group. So it can be found out that the Tick-8 technique has an effect on Iranian EFL learners' retention of vocabulary.

6. Discussion of the Study

Considering the results and interpretations of the tests and total scores shown in the previous section, the research question can be answered now:

1. Does the Tick-8 technique have any effect on Iranian EFL learners' vocabulary knowledge?

The findings of the present study prove that there is a significant difference between the scores of participants in the T-8 experimental group and the control group. These results reject the related null hypothesis of the study and confirm the alternative one. So, it can be said that the Tick-8 technique has an effect on Iranian EFL learners' vocabulary knowledge. As the results of the study indicate, there is a significant difference among the scores of participants in the Tick-8 group from the pre-test to the post-test. Thus, these results reject the related null hypothesis of the study and confirm the alternative hypothesis with respect to the related research question. So, according to the results, it can be concluded that the TICK-8 technique has an effect on Iranian EFL learners' vocabulary knowledge over time. So, the results of this study can be in line with some of the studies that confirm the use of language learning strategies, especially different kinds of mnemonic strategies in learning vocabulary (e.g., Gu & Johnson, 1996; Cohen & Aphek, 1980; Levin, Nordwall, Margrate, 1992; and Soanes, 2006). While this study was conducted among intermediate level subjects, the results of this study are in contrast with Pavicic (2008). He stated that complex strategies, those demanding a deeper and more active manipulation of information, can be used by more proficient learners of the target language.

7. Conclusion

In an attempt to recognize the effects of the Tick-8 technique on EFL learners, the present study aims to investigate the effects of the Tick-8 techniques' effects in learning vocabulary among Iranian EFL learners. The statistical analysis of the data gathered from one control group and one experimental group revealed that the Tick-8 technique has a significant effect on learners' vocabulary knowledge. This research had some limitations as follows:

First, because of the small number of students in the intermediate level in a same age, participants in this study have a different age from 21- 28. Second, the number of participants was 60. Third, vocabulary has a multi-dimensional aspect so, teaching and also mastering all of these dimensions takes time and is certainly not straightforward. Attention to all aspects of vocabulary knowledge was impossible, so this study examines just learner's retention of vocabulary items. Fourth, only intermediate learners participated

in this study. Finally, the length of planning time included in this study was limited to 30 minutes for each session.

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