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Challenging Assumptions  
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# Vocabulary learning strategies and L2 proficiency

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This study investigated the impact of language proficiency levels on Creative, Reflective, Effective, Active, and Motivated (CREAM) vocabulary learning strategies (Cottrell, 1999). 120 language learners were assigned to three proficiency levels via the administration of a standardized language proficiency test. A 60-item questionnaire was also administered that included five strategies on a 5-point Likert scale and a 50-item validated and reliable vocabulary test to measure their vocabulary size. The results of multi-variant analysis of variance (MANOVA), correlational analysis, post-hoc Scheffe's test, and factor analysis through the varimax rotation method indicated that the subjects at different levels of proficiency used these strategies with different frequencies; they collectively used motivated, effective, and reflective learning with a higher frequency than the other two strategies.

**T**heories of language and language learning had long concerned themselves with discussion of grammar and phonology “as more serious candidates of theorizing” (Richards, 1976, p. 77), at the cost of neglecting vocabulary (Zimmerman, 1994; Lessard-Clouston, 1994). Influenced by linguists, syllabus designers concentrated on syntax and morphology (Lessard-Clouston, 1994). Studies of error analysis had grammar as their most important concern and ignored vocabulary as a matter of personal interest for the students (Oxford et al., 1996; Oxford & Scarcella, 1994). With the advent of the communicative functional syllabus and the attendant focus on the learner as the most important element in the learning process, vocabulary was restored to the position it had deserved for long (Coady and Huckin, 1997).

## Statement of the problem

Modern foreign language pedagogy stresses the importance of teaching students appropriate learning and studying strategies (Brown, 2002; Oxford, 1990). In reality; however, learners tend to use a variety of strategies in combination rather than as a single one. Hence, the purpose of this study is to examine vocabulary learning strategies, namely: *creative, reflective, effective, active, and motivated* strategies for learning vocabulary (the CREAM strategies), proposed by Cottrell (1999), to determine whether among a spectrum of vocabulary learning strategies, these would work better than others; in other words, to see whether the use of the CREAM strategies for learning vocabulary by EFL learners has any impact on their vocabulary retention. In addition, the current study attempted to discover whether the CREAM strategies for learning would affect the development of the general L2 proficiency of the subjects of the study.

## Significance of the study

Most of the studies conducted on vocabulary learning have examined the effectiveness of the individual strategies (Cohen and Apeh, 1980) or have compared the results of the application of two or three strategies (Royer, 1973; Atkinson, 1975; Crow and Quigley, 1985). Royer (1973) revealed that rote repetition is less effective than structured reviews. Baxter (1980) argued that dependence on bilingual dictionaries could cause trouble. Others have studied semantic field, semantic network/map or semantic grid strategies and have discussed their advantages and disadvantages (Crow and Quigley, 1985). Still others have conducted research on the most famous of mnemonic

methods, the keyword method (Atkinson, 1975). Many researchers have gauged the usefulness of extensive reading and have demonstrated its effectiveness for enhancing lexical knowledge incidentally (Parry, 1997; Hulstijn, 1997). Nation (2001) argued that vocabulary is acquired best through fully contextualized activities.

Only in recent years have researchers begun to take into account all the strategies and recognize their influence on language/vocabulary learning (Gu and Johnson, 1996). This approach seems to be more realistic because no language learners use just a single strategy for vocabulary enrichment. Therefore, researchers have taken an alternative approach to vocabulary acquisition research, i.e., a holistic/integrated approach that takes all the strategies into account that recognizes their role in the expansion of vocabulary (Gu and Johnson, 1996). Successful language learners tend to select strategies that work well together in a highly orchestrated way, tailored to the requirements of the language task (Chamot & Kupper, 1989). The choice of particular strategies by learners is based either on their beliefs about vocabulary and vocabulary learning, or on other cognitive factors (Horwitz, 1987). So, consistent employment of certain types of strategies forms an approach to vocabulary learning that may even influence the level of foreign language proficiency (Sanaoui, 1995 and Gu & Johnson, 1996). Oxford et al. (1990) demonstrated that the use of appropriate language learning strategies often results in improved overall proficiency or achievement in specific skill areas. On the other hand, the level of language proficiency itself may function as a variable that affects the choice of vocabulary learning strategies.

## Background

Cottrell (1999) believed that there are some basic approaches that can accelerate the learning process. She believed that CREAM strategies developed out of practical work undertaken with hundreds of students over ten years shows a reflective, active, and self-evaluating approach to learning which develops a deeper understanding in the long term.

## *CREAM strategies for vocabulary learning*

Cottrell (1999) defined the CREAM strategies for learning as follows:

C - Creative: creative learners have the confidence to use their individual strategies and styles, applying imagination to their learning.

R - Reflective: reflective learners are able to learn from their experience, analyze and evaluate their own performance, and draw lessons from it.

E - Effective: effective learners organize their space, time, priorities, state of mind and resources (including information technology) to the maximum benefit.

A - Active: active learners are personally involved in doing things, physically and mentally, to help them make sense of what they learn.

M - Motivated: motivated learners are aware of their own desired outcomes; maintain their commitment in order to reach the short and long term goals they have identified for themselves.

## *Creative learning*

Creativity is especially important for generating ideas in the early stages of new assignments. Students can use more logical approaches in order to evaluate which creative ideas to use. Approaches that foster creativity are: playtime, lateral thinking, thinking of as many ways as possible that they could be considered connected, there's more than one right answer (once one has come up with an answer, look for another one), and combining things (the essence of invention is mixing two different ideas or contexts to create a new variety). A part of creative learning is that learners have the ability to consider their learning styles and things to broaden their study strengths.

## *Reflective learning*

According to Cottrell (1999), students should be responsible for their own progress and development as autonomous learners. Although they will receive formal assessment and views of other people, they benefit from being able to conclude for themselves, through a process of analysis and reflection, what they do well, what they need to improve, and their priorities. Students' performance is likely to improve if they develop a habit of putting time aside to reflect on how they learn. They will find that they study more effectively if they consider such things as: their motivation, changes in their attitudes and ideas, the appropriateness of their current study strategies to the tasks they are undertaking, which skills they need for different kinds of assignment, and what impedes their learning.

According to Cottrell (1999), there are five methods of developing reflection:

1. Keeping a learning journal
2. Using self - evaluation questionnaires
3. Keeping an updated profile
4. Making constructive use of feedback from tutors
5. Filling in progress sheets regularly

### *Effective learning*

Effective study depends on having your state of mind, space, time, and materials organized in the ways that best suit the students' learning. Students should create a state of mind for study. For many people, it is quite difficult to get into a study mood. Everyone has their own particular distracters. There are some methods for effective study: students should provide their own motivational strategies and create the right condition. It is a good idea to keep an effective diary, and it should be a complete record of what the students have to do. (For example write in all study deadlines, exam dates, etc.).

### *Active learning*

Characteristics of active learning according to Cottrell (1999) are:

1. Students look for ways of being more involved in what they are learning.
2. They are engaged in the whole learning process (and in position to see why information has been selected).
3. They look for links between different things that they discover.

4. They make a conscious effort to make sense of, and find meaning in what they learn.
5. They are involved in reflection and self-evaluation.
6. Their attention spans are longer because their minds are more fully engaged.
7. Their long-term memory relates what they have learned to what they already know; they are more likely to remember what they have learned.
8. Their linking of information helps them see how they can apply it to different situations.
9. Their learning is personalized and interesting.

### *Motivated learning*

Students can strengthen their motivation through reflecting upon their reasons for pursuing the course of study. They can set goals and make tasks more effectively by breaking them down into mini-goals. They can set short-term goals, so that they are able to have lots of small successes.

Closely related to motivation is attitude. Students should try to think of difficulties as challenges. If there is something that they have to learn which seems threatening, they should consider the ways in which it can also be an opportunity to do something new. They are more likely to succeed in their study goals if they have a clear sense of purpose. Students can write in more details about what they aim to achieve. Their reasons for studying and their desired outcomes can guide the way they continue their studies.

## Research questions

To achieve the purpose of this study, the following research questions were raised:

1. Does the use of the CREAM strategies have any impact on the vocabulary retention of EFL learners?
2. Is there any relationship between the use of the CREAM strategies for learning vocabulary and the subjects' proficiency levels?

## Method

### Subjects

In this study, the subjects were 150 adult Qatari female students randomly selected from among a population of 1500 students who were at the upper intermediate level (as defined by English Department – Foundation Program and TOEFL Institutional); this means that all the subjects had already covered both the elementary and intermediate *North Star* series. All the subjects participated in the process of this research willingly. Due to some problems, such as incomplete or spoiled responses, data gathered from 30 students were eliminated. As a result, the number of the subjects reduced to 120 students.

### Instrumentation

Three instruments were used to collect the data from the subjects: a) a Comprehensive English Language Test (CELT) for determining the proficiency levels of the students; b) a questionnaire on language learning strategies called the CREAM strategies for learning vocabulary (Appendix A);

and c) a vocabulary test (Appendix B) based on the students' current level of language ability, that is, on the basis of *North Star Intermediate* and *Upper Intermediate* books.

### Language proficiency test (LPT)

The test was an original version of CELT. It included two sections: *structure* (75 items) and *vocabulary* (75 items).

### Vocabulary Learning Questionnaire (VLQ)

A 60 item questionnaire was developed based on the instructions and practices proposed by Cottrell (1999) for fostering and building each of the CREAM strategies for learning. Based upon the Cottrell's idea (S. Cottrell, personal communication, March 19, 2005), the CREAM strategies for learning (*creative, reflective, effective, active, and motivated learning*) exist in all students and need to be brought to awareness. The questionnaire included five sections on five major categories of learning strategies (Appendix A).

### Vocabulary test (VT)

A vocabulary test was administered to measure the participants' word power. The vocabulary test was developed on the *North Star Intermediate* and *Upper Intermediate* books. The test was piloted on 30 examinees most similar to the characteristics of the target group, with (KR-21) reliability index ( $r = .86$ ).

## Procedure

First, the CELT and then the vocabulary test were administered in two different sessions in a week. The respondents were given the same questionnaire to complete in another separate session, and each item was read and clarified for them (mostly by giving examples). There was no time limit for the completion of the questionnaire. The subjects' scores on the CELT divided them into three proficiency groups (high, intermediate, and low) for further analysis.

## Data analysis

The data gathered on the characteristics of the subjects under study were analyzed by statistical methods: descriptive statistics were obtained to see the overall patterns of vocabulary learning strategies used by the subjects, a multi-variant analysis of variance (MANOVA) was also conducted to compare the mean scores of the three proficiency groups (high, intermediate, and low) on components of the CREAM, the vocabulary test, and the proficiency test. A correlational analysis was also implemented to determine the relationship between the variables. Finally, a factor analysis was performed to probe the underlying structure of the tests employed in this study.

## Results and discussions

To answer the research questions,

1. Does the use of the CREAM strategies have any impact on the vocabulary retention of EFL learners?

2. Is there any relationship between the use of the CREAM strategies for learning vocabulary and the subjects' proficiency levels?

A MANOVA was conducted to compare the mean scores of the three proficiency groups (high, intermediate, low) on the components of the CREAM strategies, the vocabulary test, and the proficiency test. The criteria for dividing the subjects into three proficiency groups were their scores on the proficiency test. Those who scored 70 or higher (with percentile ranks equal to or higher than 66.66) formed the Advanced Group (AG). The subjects who scored 57.33 or lower (whose percentile ranks were 33.33 or lower) formed the Elementary Group (EG), and the rest of the subjects were placed in the Intermediate Group (IG). As indicated in table 1 below, the  $f$  observed value for the effect of the proficiency level, 34.50, at 2 and 117 degrees of freedom was much greater than the critical value of  $f$  at .05 level of significance, i.e., 3.09.

**Table 1. MANOVA, CREAM strategies and VT by proficiency: between subjects**

Source of variation	SS	df	MS	f obs.	f crit.
Within cells	42804.28	117	365.85	-----	-----
Proficiency	25246.39	2	12623.18	34.50	3.09

Thus, it can be concluded that the proficiency levels of the subjects have a significant impact on their scores. Moreover, in order to locate the exact place of differences among the three proficiency groups, the post-hoc Scheffe's tests were employed. As displayed in Table 2, there are significant differences among the mean scores of all proficiency groups.

**Table 2. Post-hoc Scheffe's tests proficiency groups**

Comparisons		Observed	Critical
High	Low	21.47*	4.73
$\bar{X} = 74.12$	$\bar{X} = 52.65$		
High	Intermediate	10.65	5.08
$\bar{X} = 74.12$	$\bar{X} = 63.74$		
Intermediate	Low	10.82*	5.41
$\bar{X} = 63.47$	$\bar{X} = 52.65$		

Note: \*Denotes significant differences at .05

The  $f$  observed value for the effect of the tests variables, 31.69, at 5 and 585 degree of freedom is much greater than the critical value of  $f$  at .05 level of significance, Le., 2.23 (Table 3).

**Table 3. MANOVA: CREAM strategies and vocabulary test by proficiency: within-subjects**

Source of variation	SS	df	MS	f obs.	f cri.
Within Cells	27999.98	585	47.86	-----	-----
TESTS	7582.82	5	1516.56	31.69	2.23
TESTS × Proficiency	614.60	10	61.46	1.28	1.84

Thus, it can be concluded that there are significant differences among the means of the different tests employed in this study. The  $f$  observed value for the interaction

between the proficiency and types of tests, 1.28 (Table 3) is lower than the critical value of  $f$ , indicating that there is no interaction between the two variables. The results of the post-hoc Scheffe's tests (Table 4) indicated that the three components of the CREAM strategies (creative, effective, and reflective) were used more frequently by more proficient students in comparison to their performance on the vocabulary test. The rest of the differences are not statistically significant.

**Table 4. Post-hoc Scheffe's Test, the CREAM strategies test, and vocabulary test**

Comparisons		Observed	Critical
Motivated	Vocabulary	10.38	5.59
$\bar{X} = 72.33$	$\bar{X} = 61.95$		
Motivated	Active	9.33	5.59
$\bar{X} = 72.33$	$\bar{X} = 63$		
Motivated	Creative	8.52	5.59
$\bar{X} = 72.33$	$\bar{X} = 63.81$		
Effective	Vocabulary	8.42	5.59
$\bar{X} = 70.37$	$\bar{X} = 61.95$		
Effective	Active	7.37	5.59
$\bar{X} = 70.37$	$\bar{X} = 63$		

Comparisons		Observed	Critical
Effective $\bar{X} = 70.37$	Creative $\bar{X} = 63.81$	6.56	5.59
Reflective $\bar{X} = 67.60$	Vocabulary $\bar{X} = 61.95$		

In order to probe the underlying structure of the tests employed in this study, a factor analysis through the varimax rotation method was conducted (Table 5). The five components of CREAM loaded on the first factor indicated that they were assessing the same underlying trait. In addition, the vocabulary and proficiency tests loaded on the second factor. Due to the nature of the vocabulary and the proficiency tests, these two tests can be labeled as general proficiency factors. Hence, the impact of language proficiency on the use of the CREAM strategies for learning vocabulary can be clearly observed.

The Pearson product moment correlation coefficient was calculated to show the degree of relationship between the variables. All the coefficients were significant at .001 level. The correlation between the proficiency test and the other tests can be used as indexes of criterion referenced validity of the latter tests. (Table 6)

**Table 5. Factor analysis: varimax rotation method**

Tests	Factor 1	Factor 2
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Active	.84	
Motivated	.76	
Reflective	.72	
Creative	.65	
Effective	.57	
Vocabulary		.90
Proficiency		.88

In order to answer the research questions, the correlations were obtained among the 5 independent variables individually (i.e. creative, reflective, effective, active, and motivated learning) and among the strategies as a whole (i.e. the CREAM strategies) on one side; and the two dependent variables (language proficiency level and vocabulary size) on the other. (see Table 6).

As Table 6 suggests, the CREAM strategies for learning is highly correlated with both proficiency level and vocabulary size ( $r = .67$  and  $r = .64$ ). Out of the 5 components of the CREAM strategies for learning, creative, reflective, and effective learning had a higher correlation with both proficiency level and vocabulary size. Creative learning ( $r = .61$  and  $r = .60$ ), reflective learning ( $r = .60$  and  $r = .55$ ), effective learning ( $r = .60$  and  $r = .58$ ). There is also a high correlation among the components of the CREAM strategies: creative ( $r = .84$ ), reflective ( $r = .86$ ), effective ( $r = .79$ ), active ( $r = .78$ ), and motivated ( $r = .79$ ). Among the components, Reflective learning ( $r = .86$ ) had a highest correlation with the CREAM strategies, and then in descending order the other correlation rankings were: creative ( $r = .84$ ), effective ( $r = .79$ ), motivated ( $r = .79$ ), and active ( $r = .78$ ). It can be concluded

**Table 6. Correlational analysis (Pearson product moment)**

Correlations	Proficiency	Creative	Reflective	Effective	Active	Motivated	CREAM	Vocabulary
Proficiency	1.0000	.6185**	.6061**	.6095**	.4645**	.4582**	.6716**	.8181**
Creative	.6185**	1.0000	.7043**	.6284**	.5826**	.5458**	.8438**	.6077**
Reflective	.6061**	.7043**	1.0000	.6344**	.5848**	.5921**	.8678**	.5510**
Effective	.6095**	.6284**	.6344**	1.0000	.5288**	.5116**	.7937**	.5874**
Active	.4645**	.5826**	.5848**	.5288**	1.0000	.5356**	.7839**	.4087**
Motivated	.4582**	.5458**	.5921**	.5116**	.5356**	1.0000	.7945**	.4919**
CREAM	.6716**	.8438**	.8678**	.7937**	.7839**	.7945**	1.0000	.6460**
Vocabulary	.8181**	.6077**	.5510**	.5874**	.4087**	.4919**	.6460**	1.0000

Note: N of cases: 120 2-tailed Significance: \* -.01; \*\* -.001

that the students benefited more from being able to discover for themselves, through a process of analysis and reflection, what they do well, what they need to improve, and their priorities. They practiced creativity and also generated ideas toward a more effective learning.

In addition to the aforementioned correlations between all the independent variables and the dependent ones, the relationship between vocabulary size and general English proficiency level was examined. A reasonably high correlation coefficient ( $r = .81$ ) was obtained. Tables 7, 8, 9, and 10 show the descriptive statistics for the total, high, intermediate, and low proficiency groups respectively. The related charts made on the basis of these tables can be found in Appendix C.

**Table 7. Descriptive statistics: total**

Variables	M	SD	S2	Min	Max	N
Proficiency	63.41	14.98	224.29	21.33	93.33	120
Creative	63.82	11.63	135.17	36.67	90.00	120
Reflective	67.60	12.18	148.39	30.77	100.00	120
Effective	70.38	11.32	128.08	41.82	101.82	120
Active	63.00	11.19	125.14	38.33	100.00	120
Motivated	72.33	13.41	179.80	31.67	100.00	120
CREAM	67.38	9.78	95.72	37.33	91.00	120
Vocabulary	61.95	17.21	296.03	24.00	96.00	120

**Table 8. Descriptive statistics: advanced**

Variables	M	SD	S2	Min	Max	N
Proficiency	77.03	7.12	50.63	66.67	93.33	52
Creative	70.80	8.81	77.62	45.00	90.00	52
Reflective	73.61	9.90	98.07	55.38	100.00	52
Effective	76.85	9.24	85.44	60.00	101.82	52
Active	67.40	11.59	134.36	41.67	100.00	52
Motivated	77.12	9.54	90.97	55.00	100.00	52
CREAM	73.10	6.75	45.61	57.00	91.00	52
Vocabulary	75.15	10.47	109.54	50.00	96.00	52

**Table 9. Descriptive statistics: intermediate**

Variables	M	SD	S2	Min	Max	N
Proficiency	61.33	2.47	6.10	57.33	66.00	30
Creative	63.11	9.44	89.02	36.67	81.67	30
Reflective	68.82	10.33	106.75	30.77	83.08	30
Effective	69.09	9.45	89.38	41.82	83.64	30
Active	63.72	8.29	68.72	43.33	91.67	30
Motivated	74.06	11.08	122.74	35.00	90.00	30
CREAM	67.76	7.23	52.23	37.33	79.33	30
Vocabulary	59.20	10.99	120.72	30.00	80.00	30

**Table 10. Descriptive statistics: elementary**

Variables	M	SD	S2	Min	Max	N
Proficiency	46.42	9.29	86.31	21.33	56.67	38
Creative	54.82	10.29	105.95	36.67	78.33	38
Reflective	58.42	10.95	119.93	35.38	76.92	38
Effective	62.54	10.03	100.70	41.82	76.36	38
Active	56.40	9.54	91.07	38.33	75.00	38
Motivated	64.43	16.06	257.99	31.67	96.67	38
CREAM	59.25	9.49	90.12	41.67	78.00	38
Vocabulary	46.05	13.99	195.78	24.00	72.00	38

### Conclusion and interpretation of findings

This study was an attempt to profile the beliefs and strategies used for learning EFL vocabulary. In doing so, the researcher randomly selected a sample of 120 female learners in advanced EFL courses from among a population of 1500. An original version of CELT was used to determine the respondents' level of general L2 proficiency. A vocabulary test was also given in order to measure the participants' word knowledge.

The subjects were also given a questionnaire to report the kind of vocabulary learning strategies (the CREAM strategies for learning) they use. Having obtained the descriptive data, the author intended to draw a general pattern of the use of the CREAM strategies for learning vocabulary as favored by this sample of these EFL learners. Among the CREAM strategies for learning, motivated learning was found to be the most frequently used one. Effective learning ranked the second. The third rank went to

reflective learning strategy, followed by the active learning strategy which was used mainly by the intermediate and elementary level students. The creative learning strategy was used by the Advanced level (Appendix C). So, subjects in the advanced group learned vocabulary more creatively than those at intermediate and elementary levels (Tables 8 - 10).

In addition, an attempt was made to discover if the application of such vocabulary learning strategies would develop the participants' general L2 proficiency level. A MANOVA was conducted to compare the mean scores of the three proficiency groups. It concluded that the proficiency level of the subjects had a significant impact on their scores obtained from the other tests (the vocabulary questionnaire and the vocabulary size test). A Pearson product moment correlation coefficient was conducted to show the degree of the relationship between the variables.

The CREAM strategies for learning vocabulary were highly correlated with the subjects' proficiency levels and the vocabulary test. Out of the 5 components of the CREAM strategies for learning, creative, reflective, and effective learning had a higher correlation with both proficiency level and the vocabulary size. The choice of each component of the CREAM strategies differed according to the students' proficiency levels at each group. Those in the high proficiency level used creative, reflective, and effective learning with greater frequency in comparison to the other two components (active and motivated). This group also displayed a high correlation among the components of the CREAM strategies for learning. The conclusion suggested by these findings is that a student that learns vocabulary creatively may also be reflective, effective, active, and

motivated in vocabulary learning. The same analysis also obtained a high correlation between the subjects' language proficiency level and their performance on the vocabulary size test.

It is worth noting that although there was a high correlation between the English proficiency test scores and those of the vocabulary size test (i.e.,  $r = .81$ ), the CREAM strategies for learning vocabulary and its components (except *motivated*) correlated more with English proficiency level than vocabulary size test. McDonough (1995) stated “it seems ... that strategy use by the high-and low-proficiency learners differed in both quantity and kind” (p.94). McDonough’s findings therefore appear to corroborate those of this study.

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## Appendix A

## CREAM Learning Strategies Questionnaire

Creative Learning Strategy						
#	Statement	Never	Very little	A little	Often	Very frequently
1	There are different ways for learning new words.					
2	I think that I am creative and I can find different ways for learning new word.					
3	When I come across a word, which doesn't suit the context, I consult a dictionary to find out about the most appropriate usage of it.					
4	When it is necessary, I combine two words to create a new word.					
5	In learning new words I try to connect them with other languages or things in the environment with which they don't have any similarities.					
6	I imagine myself a teacher who teaches, asks questions, and tests the new words.					
7	I make a notebook for the meaning of the new words and I keep it with myself to review them and think about their meanings.					
8	In everyday life whenever I come across English words (e.g., buses, shops, goods, etc.) I look for their meanings curiously.					
9	I change my approach in learning new words and I don't stick to a special way in doing so.					
10	I try to make semantic or structural charts of the words for learning them.					
11	I consult my friends about the words' meaning, pronunciation, and formation.					
12	I keep a notebook with myself to write down my ideas on learning new words and later I see which ones word better.					

Reflective learning strategy						
#	Statement	Never	Very little	A little	Often	Very frequently
13	I imagine that I am responsible in learning words; it is not the teacher's duty to make me learn.					
14	I put some time away to reflect on how I learn words.					
15	I keep a notebook to write down my progress in learning words and I'll check it later on.					
16	I make use of feedback from my tutors and I ask them about my progress regularly.					
17	I evaluate my learning and my progress fairly.					
18	I know in which aspects I'm strong and in which ones I need to make progress (I should work harder).					
19	I reflect upon the words' meanings and their usage.					
20	I always seek for the best ways in learning new words.					
21	I reflect upon the effectiveness of the strategies I've used and I think about the strong and weak points.					
22	I consider my motivation for learning words.					
23	I'll change my approach or motivation if necessary.					
24	I always pay attention to the appropriateness of the strategies I use and the need I have in learning words.					
25	I reflect on my disabilities in learning words.					
Effective learning strategy						
#	Statement	Never	Very little	A little	Often	Very frequently
26	I try to learn the words which are used in daily conversation or which are use in schoolbooks.					
27	I think learning a great number of words in a short passage or in a short period of time will make me tired and bored.					
28	I try to discuss the new words with others.					
29	I don't feel guilty if it's been a few days that I haven't been learning new words					

30	I try to learn the new words while I have concentration and I'm not tired.					
31	I ask about the words' pronunciation and meaning when I need help.					
32	I try to make meaningful connections between the new words of different lessons.					
33	I try to use the newly learned words in daily conversation.					
34	I'm not worried if I can't remember the words and all the details.					
35	I don't memorize words in isolation rather I try to comprehend them in their context.					
36	I'm not worried if my friends have progressed far more than me in learning the new words.					
<b>Active learning strategy</b>						
#	Statement	Never	Very little	A little	Often	Very frequently
37	I draw symbols and pictures for learning new words.					
38	I summarize a passage and replace the new words with their synonyms.					
39	I always make a meaningful link between the newly learned words and the words I knew before.					
40	I think learning new words can be fun.					
41	I believe that making a meaningful link between the newly learned and previously learned words will help me to remind the new words more easily.					
42	I look for the ways that make me a more active learner and finding these ways is my own duty.					
43	I don't find the teacher's instructions and the materials of the book entirely sufficient in learning new words.					
44	I teach the newly learned words to the others or I use them to talk about a topic.					
45	I think I can learn the words by myself and it would be very interesting.					

46	I pay attention to my own questions and I try to find the answers.					
47	I check my vocabulary notebook and I try to make it organized.					
48	I work out, which reading materials or books will help me more in learning words therefore I use them.					
Motivated learning strategy						
#	Statement	Never	Very little	A little	Often	Very frequently
49	My goal for learning new words is to find a good job.					
50	I want to learn new words in order to prove my abilities to myself.					
51	I enjoy learning new words.					
52	Knowing more words increase my self-confidence in communicating with others.					
53	I think the more words I know the more successful I will be in higher education.					
54	I can influence my friends by knowing more words.					
55	I try to know more about the culture of the language in which the words are used.					
56	I try to learn the words that are used by the native speakers in their daily conversation.					
57	I like to learn the words from the native speakers.					
58	Making mistakes in learning new words is natural so I am not discouraged in doing so.					
59	I try to learn the words, which I'm capable of.					
60	I always set targets and motivations in learning new words and I celebrate my success in doing so. (For example, I take a half-hour break)					

## Appendix B

## Vocabulary test (VT)

Instruction: Choose the best option A, B, C, or D, and mark your answer sheet

1. He is in a critical condition as his physician said his condition is -----.

- A. deteriorating
- B. summoning
- C. conquering
- D. decreasing

2. You have to show your qualifications in order to satisfy the college ----- requirements.

- A. matriculation
- B. daunting
- C. genuine
- D. prodigy

3. There has been a growing ----- towards smaller families in recent decades.

- A. intention
- B. trend
- C. tend
- D. intent

4. He wanted to increase his ----- limit, but the bank refused.

- A. loan
- B. credit
- C. money
- D. pay

5. Austin ----- to be sick. So he would not have to go shopping.

- A. prepared
- B. permitted
- C. prevented
- D. pretended

6. Unfortunately, they ----- just before the wedding.

- A. broke out
- B. took up
- C. broke up
- D. took out

7. Many organizations conduct a/an ----- against nuclear weapons.

- A. offence
- B. competition
- C. attempt
- D. campaign

8. What is the opposite of "rich food"?

- A. poor food
- B. weak food
- C. plain food
- D. rare food

9. A more formal word for "cooking" is ----- .

- A. cruise
- B. cynic
- C. cuisine
- D. cookery

10. He was ----- his job because he was inefficient.
- A. dropped off
  - B. sacked from
  - C. pulled from
  - D. left out
11. A/An ..... is NOT interested in other people's business.
- A. intolerant
  - B. uninquisitive
  - C. unselfish
  - D. tactless
12. He used to ----- pens and pencils in a special box.
- A. hoard
  - B. gobble
  - C. spit
  - D. pickle
13. He's a very ----- man. He believes in himself and never worries about the problems.
- A. confidential
  - B. confident
  - C. concerned
  - D. complete
14. The British system of law is very ----- and not many people fully understand it.
- A. complained
  - B. concise
  - C. complicated
  - D. complete
15. A Rolling Stone gathers no ----- .
- A. dust
  - B. rust
  - C. moss
  - D. grass
16. Scientists have discovered the fossilized remains of ----- animals in some parts of the earth.
- A. exist
  - B. extinct
  - C. distinct
  - D. exit
17. Marty's bad health ----- him from military service.
- A. prosecuted
  - B. prevented
  - C. demolished
  - D. exempted
18. The fact of being ----- in a dirty town was another thing that helped us to be competitive.
- A. put down
  - B. brought up
  - C. blown up
  - D. come round
19. I wasn't there, but ----- it was a good party.
- A. eventually
  - B. currently
  - C. apparently
  - D. dramatically
20. The idea of traveling round the world on foot is absurd.
- A. ridiculous
  - B. believable

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- C. absorbing  
D. curious
21. Which of the following is the odd-one-out ?  
A. Swatting  
B. False teeth  
C. Wrinkles  
D. Going bald
22. In any case it is possible that the advantages outweigh the -----  
A. inflection  
B. intuitions  
C. drawbacks  
D. discretions
23. You're more ----- to illnesses when you're tired, and your body is run-down.  
A. promoted  
B. sensuous  
C. subtle  
D. prone
24. Her silence during police interrogations was taken as an ----- of guilt.  
A. recognition  
B. admission  
C. adversity  
D. interpretation
25. Audrey Rose is a/an ----- ghost story. When I read it, I was absolutely petrified.  
A. agonizing  
B. absurd  
C. macabre  
D. inexpressible
26. Bands of soldiers ----- the countryside. They set the houses on fire and destroyed the forests.  
A. tracked  
B. plunged  
C. grasped  
D. ravaged
27. These negotiations have been ----- with difficulties right from the start.  
A. wrecked  
B. fraught  
C. disputed  
D. potential
28. The game ended in a/an ----- . Neither team won.  
A. draw  
B. loss  
C. equal  
D. nil
29. His disease is not anything new. It's a/an ----- one.  
A. allergic  
B. chronic  
C. hysteric  
D. epidemic
30. Sitting on the top of the unroofed vehicle the tourists took photos of Hyde Park in London.  
The vehicle here is a:  
A. Double-decker  
B. Coach  
C. Barge  
D. Moped

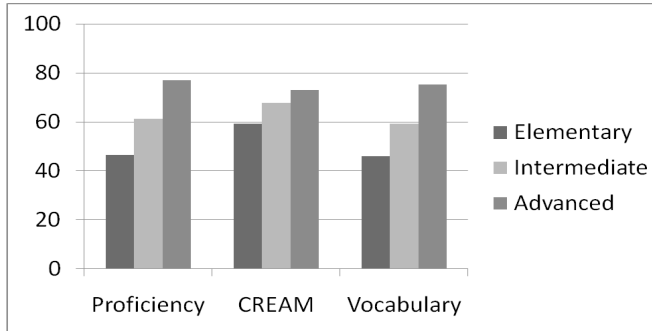
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31. Which of the following means of transportation could function both at sea and on land.
- A. Amphibious vehicles
  - B. Double-deckers
  - C. Gliders
  - D. Liners
32. Jack treats injuries to bones and muscles using pressure and movement. He practices .....
- A. herbalism
  - B. homeopathy
  - C. osteopathy
  - D. faith healing
33. The new problems will ..... the previous problems. Therefore, the workers' strike is regarded as a certainty.
- A. sustain
  - B. outstrip
  - C. confront
  - D. confound
34. Most of the time toothpaste is squeezed into a/an shape.
- A. circular
  - B. rectangular
  - C. oval
  - D. cylindrical
35. That summer there was a drought and the countryside was -----and brown.
- A. ransacked
  - B. creased
  - C. parched
  - D. collapsed
36. A jury is entitled to ----- or acquit.
- A. envisage
  - B. censor
  - C. convict
  - D. recur
37. The path ..... steeply into the valley below.
- A. integrated
  - B. descended
  - C. approached
  - D. intersected
38. She's one of those ----- people who can't pass a mirror without looking into it.
- A. self-centered
  - B. vain
  - C. self-contained
  - D. vicious
39. I couldn't get a ticket but my uncle works there so he pulled ----- and got one for me.
- A. a face
  - B. wire
  - C. strings
  - D. ropes
40. He said I hadn't given him his book, but I was ----- sure I had.
- A. entirely
  - B. quite
  - C. hardly
  - D. collect

- JALT2007 — Challenging Assumptions**
41. If you want to ----- success in life, you have to work hard.  
A. achieve  
B. award  
C. receive  
D. collect
42. He was homesick, and he ----- all his family and friends.  
A. lost  
B. desired  
C. lacked  
D. missed
43. When I breathe in. I get a sharp ----- in my chest.  
A. cramp  
B. sore  
C. ache  
D. pain
44. I've tried to ----- my children to be quite independent.  
A. put with  
B. bring out  
C. bring up  
D. grow up
45. We thought the chair was an antique worth a lot of money, but it turned out to be ----- .  
A. priceless  
B. valuable  
C. invaluable  
D. valueless
46. The manager is looking for projects of great -----, those which are completely new and different.  
A. expectancy  
B. expertise  
C. originality  
D. plot
47. They spent an ----- amount of time getting the engine into perfect condition.  
A. exorbitant  
B. daunting  
C. limitless  
D. infinite
48. Crab sand fish are plentiful in the Caspian Sea.  
A. vanishing  
B. abundant  
C. gathered  
D. declining
49. The area has become a haven for people who are tired of the ----- pace of city life, searching for quiet and inner peace.  
A. hectic  
B. absurd  
C. abrupt  
D. halting
50. The company seems to be making some ----- against its rivals.  
A. headlight  
B. headlong  
C. headstrong  
D. headship

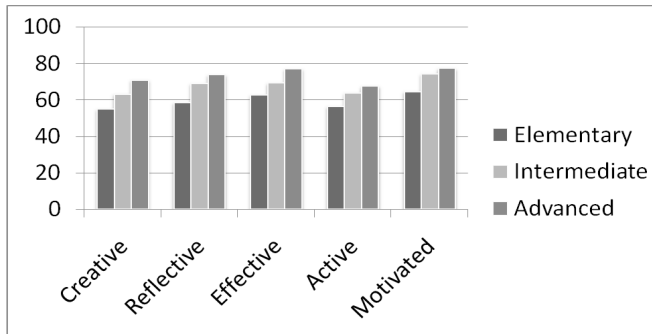
### Appendix C

#### Charts

**Chart 1. Descriptive Statistics: differences among groups**



**Chart 2. CREAM by proficiency**



**Chart 3. Total frequency of CREAM use across proficiency groups: MERCA**

