

**The Employment of Vocabulary Learning Strategies  
by Master Biology Students at  
Mostaganem University**



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**Abstract:**

English language vocabulary is indispensable for English as a foreign language (EFL) and English as a second language (ESL) learners in conjunction with learners who seek to learn English for special objectives. This study tries to examine the different vocabulary learning strategies utilized by first year Master students of Biology as an apparatus to boost (up) (delete up ) the teaching/ learning of vocabulary. Schmitt's vocabulary learning strategies (VLS) questionnaire was used to collect data from 50 participants from the department of Biology at Mostaganem University. The results show that the students prefer handy, useful and trouble-free strategies for learning vocabulary. The social and meta-cognitive strategies were frequently employed in this investigation.

**Keywords:** Vocabulary learning strategies (VLSs), vocabulary teaching, English for specific purposes (ESP)

**1. Introduction**

Nearly all language learners are conscious that the acquisition of lexis is an indispensable chunk in the learning process. The mastery of vocabulary is deemed to be a noteworthy element for EFL / ESL learners who desire to proceed for further studies in different disciplines. In this level, Nation (1987) stated that learners require to learn about the various kinds of vocabulary and its usage, in addition Heidari et. al., (2012) stressed that vocabulary is the nucleus of any language and the basis of language learning. Besides, Wessel (2011) demonstrated that knowing the meaning of a word is essential to learners' academic success, whereas lack of lexis impedes students' understanding of texts. The total number

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of vocabulary that the learner possesses will influence his/ her accomplishment; that is why learners necessitate vocabulary learning strategies (VLS) to lend a hand for them to build up their vocabulary knowledge. Subsequently, VLS are crucial for advanced learners since they help them comprehend different words, enrich their linguistic repertoire and push them to be autonomous learners. Therefore, this study tries to examine the use of vocabulary learning strategies (VLSs) by Biology first year students when they learn English.

This research seeks to come back with an answer to the following queries:

-To what extent do first year Biology students employ vocabulary learning strategies (VLSs)?

-Which vocabulary learning strategies are mostly used?

The following hypotheses are tested:

- First year Biology students moderately employ vocabulary learning strategies.

- Determination strategy is mostly used by first year Master students of Biology.

### **1.1. Vocabulary Learning Strategies (VLS)**

The epoch of the 1980 witnessed the shift from the use of the audio-lingual method (1970's) to the use of the communicative approach, a great movement marked this era where second language acquisition swung from the focus on teachers to a focus on learners. Moreover, Schmitt (1997) raised a thorough and comprehensive endeavor. He also made available a cataloguing design for a variety of VLSs where a modification and a development of Oxford's LLS (1990) were formulated.

In the area of VLS taxonomy, Schmitt (1997) adapted his definition of VLS from Rubin (1987, p. 203), "the process by which information is obtained, stored, retrieved and used.....will mainly be defined as vocabulary practice rather than interactional communication". Whereas in the milieu of ESP, specialized vocabulary is supposed to be utilized productively (interaction with their teachers and peers) and receptively in which the ESP students comprehend and translate the acquired knowledge.

Previous studies on VLS had a tendency to concentrate on a limited number of strategies such as guessing from context, keyword method and many others. Subsequently, a far-reaching research was made in the area of VLS in which a list of taxonomies emerges. Schmitt's classification of VLS (1997) is originated from Oxford's taxonomy of LLS (2003) and at this level, many researchers admitted that language learning strategies work in parallel with VLS and the latter is considered as a sub-branch of LLS.

Vocabulary learning strategies are a part from language learning strategies which in turn are a part of general learning strategies' (Nation, 2001, p. 217). Cameron (2001, p. 92), as well, defined VLS as "the actions that learners take to help themselves understand and remember vocabulary items". Similarly,

Intaraprasert (2004, p.9) stated that VLS is "any set of techniques or learning behaviors, which language learners reported using in order to discover the meaning of a new word, to retain the knowledge of newly- learned words, and to expand their knowledge of vocabulary".

As contended by Cohen (1998, p.4), language learning strategies (LLS) "are language learning and language use strategies can be defined as those processes which are consciously selected by learners and which may result in action taken to enhance the learning or use of a second or foreign language, through the storage, retention, recall and application of information about the language". Whereas, Catalan (2003, p. 56) defined VLS as "the mechanism used in order to learn vocabulary as well as steps or actions taken by students (a) to find out the meaning of unknown words , (b) to retain them in long- term memory, (c) to recall them at will, and (d) to use them in oral or written mode".

Drawn from many perspectives, learning strategies are series of acts, plans, methods, ideas or actions that a language learner employs to boost up his acquisition, understanding, accumulation and utilization of data. Connectedly, Schmitt (1997) concentrated on teachers and their methods to students and their learning styles (Chamot & O'Malley, 1987). What Schmitt refers to as VLS has been developed from Oxford's scheme using the four strategy groups (social, memory, cognitive and meta-cognitive). The following table makes clear Schmitt's VLS that will be discussed in depth in table 1.

**Table1. Schmitt 1997 Taxonomy of Vocabulary Learning Strategies**  
(Cited in V. Jurkovic 2006, p. 26)

	<b>Discovery</b>	<b>Consolidation</b>
<b>Determination</b>	e.g., guess from textual context	
<b>Social</b>	e.g., ask classmates for meaning	e.g., interact with native speakers
<b>Memory</b>		e.g., use semantic maps
<b>Cognitive</b>		e.g., keep vocabulary notebook
<b>Meta-cognitive</b>		e.g., use L2 media

Besides, studies on the utilization of VLS bring to light that a language learner makes use of various strategies while learning. Thus, the ESP practitioner supported linguistically poor learners in order to become active users of language and to raise their awareness of strategies that they can use to learn by themselves away from the classroom zone. Go over the main points, Schmitt (1997) stated that the use of VLSs depends on the specific learning context where a number of variables have to be considered such as, students' proficiency level, motivation, and their objectives in learning the target language as well as the tasks and the passages being used.

Moreover, VLS will be diverse in relation to the learners' sole objective to comprehend the language in reading or listening or to produce it in speaking or writing. In this light, Schmitt (2000, p. 133) claimed that "active learning management is important. Good language learners do many things such as use of variety of strategies, structure their vocabulary learning, review and practice target words and so on". Likewise, Gu & Johnson (1996) pointed out that a successful user of a strategy needs to choose the appropriate one from a range of options and know how to swing to another strategy.

To abridge the meaning of VLS, Schmitt (1997) discerned the strategies that students make use of to find out the new words' meaning. Words that they come across for the first time from the ones they use to consolidate meanings. The former encompasses determination and social strategies and the latter entails social, memory cognitive and, meta-cognitive strategies.

### **1.2. ESP Vocabulary Teaching**

The end of the Second World War was a boom that gives birth to a great focus on lexis and register. Its relevance in ESP captured the attention of different scholars a propos the different approaches to ESP. Correspondingly, Sager, Dungworth and McDonald (1980, p. 230) announced that, ".....the lexicon of special languages is their most obvious distinguishing characteristic". Simply put, the specific lexical item is the one that indicates its particular register in different specialized texts.

Looking for an efficient way to teach vocabulary creates a great debate among scholars. Dudley-Evans & St John (1998) accentuated the notion of teaching vocabulary through non-direct or incident instruction; they declare that learners should acquire ESP vocabulary incidently via the use of activities and tasks. This vision agreed with the lexical approach objective in which the use of words in context is taught and learnt through communication. As an additional point, Strevens (1973) as cited in Xhaferi (2010, p. 234) contended that "learners who know scientific field may have little difficulty with technical words; but a teacher who doesn't may have a great deal". To illustrate, learners' direct exposure to the field of study and its training can improve their comprehension of words better than ESP practitioners who teach this specialty without being close to it.

ESP vocabulary teaching is one of the vital constituent for instructors to put into practice efficient ESP curricular. Vocabulary is the major facet of a register where words have specific connotations in relation to the context that they are used in. In the same line of thought, one should not deny the importance of vocabulary learning strategies in ESP classes because they are an effective manoeuvre for ESP vocabulary acquisition.

In this spirit, one may say that, ESP is not solely a subject that offers technical entities; because words do not exist in isolation but rather in a fitting milieu. As Strevens (1977, p. 144) revealed, "...we should remember that

vocabulary is hardly ever the sole indicator of a register: there is almost always a mixture of features in vocabulary, grammar and pronunciation”.

It is visibly clear that ESP vocabulary teaching is often directed to ‘*the reading skill getting*’ although it is a convoluted procedure. That is to say, using a single skill creates an inactive and impractical environment to vocabulary acquisition and subsequently the learner’s motivation will lessen. Correspondingly, the efficiency of teaching vocabulary is guaranteed when the student is not only capable to figure out words meaning but make use of them in verbal communication and writing.

What is known as productive vocabulary is deemed to be a continuum of receptive vocabulary that works for the implementation of the four skills methodology. The skills approach covers also the design of materials where English is part and parcel of the learning process. More significantly, learning vocabulary is a pivotal element in ESP instruction as English students have specific goals to attain in order to boost their job-seeking qualifications. Connectedly, Nation (1990) stated that when practicing approaches to vocabulary learning, teachers need to consider three questions:

- What vocabulary do my learners need to know?
- How will they learn this vocabulary?
- How can I test to see what they need to know and what they now know?

(Nation, 1990, p.4)

Baker (1988, p. 92) uttered that “vocabulary that has specialized and restricted meanings in certain disciplines and which may vary in meaning across disciplines”. To explicate this, the word ‘bug’ refers to an insect but when it comes to computer science; it means an error that happens at the level of your computer because of viruses. To round up, there are countless general words used in ESP contexts giving rise to dictionaries of specialized meanings. All in all, vocabulary acquisition is a durable procedure that necessitates a great deal, and ESP vocabulary teaching in particular functions as a driving force in implementing ESP curricular. Determining the content is a critical segment in ESP course design where the linguistic content is set up according to the learners’ needs. Consequently, vocabulary has a paramount importance in register identification, and word significance hinges on a definite register where it is used.

To put briefly, Lewis (1993) articulated that ESP vocabulary is regarded as a complicated chunk in comparison to EFL and ESL vocabulary because of the immense quantity of collocations. In addition to that, the use of lexical approach in teaching ESP vocabulary will make easier the manner of teaching and learning it from the context. Morgen and Rinvoluceri (2004) were in agreement with Nation (2002) in the idea that the learning of words is associative rather than mechanic, where teachers are of a great importance in helping learners know various collocations and use them properly. To sum up, the aforementioned features of

ESP vocabulary and the way to expose it conduct the researcher to highlight the importance of vocabulary learning strategies as a means to support learning it in a useful way.

### **1.3. Kinds of Vocabulary Learning Strategies**

There is an ample collection of vocabulary learning strategies as illustrated by the different taxonomies of VLS that have been put forward by various scholars. Even though there are diverse explanations of vocabulary learning strategies, this investigation stresses Schmitt's classification to examine the students' use of VLS. At this juncture, Schmitt singles out two broad kinds: discovery strategies (which include determination and social Strategies) and consolidation strategies (encompass memory, cognitive and meta-cognitive strategies); though some strategies are valid for both types.

First, determination strategies are employed individually to comprehend the word meaning without the teachers' assistance such as guessing from context, figure out from L1 cognate, using dictionaries, etc. Second, social strategies are unlike the previous one in which the learner hinges on the interaction with his/her surroundings to learn a new word by asking his/her teacher or classmates. This type of vocabulary is not only utilized to detect a new word but also to reminisce vocabularies that learners have introduced to earlier. Third, memory strategies are also labelled mnemonic strategies. These strategies help learners remember vocabulary that has been acquired before. In this type of strategies, learners will group the words learnt according to their topic or form, relate them to past experiences, spell the words and speak the words out loud. Then, cognitive strategies are synonymous to mnemonic ones, they do not stress the mental process but rather the mechanical means of comprehending already- learned words. This genre use repetition as a tool to learn vocabulary by uttering words orally or in black and white, in addition to naming objects with their meaning. Finally, metacognitive strategies in which learners employ these strategies to be in charge of their own learning by doing word evaluation such as using media, skipping new words.

### **2. Methodology**

This study makes use of a descriptive quantitative approach. It explains the vocabulary learning strategies employed by first year students of Biology at Mostaganem University. 50 participants from the department of Biology were part of this study because they had classes in this period of December 2020 during the pandemic Covid19. The instrument used for this study is an adapted version from Schmitt's questionnaire of VLS (1997); a slight modification was made in order to abridge the number of questions which do not fit the purpose of the study. This questionnaire consisted of 27 statements of vocabulary learning strategies in which the respondents are supposed to choose their answers from always, often, sometimes or never. It was completed during the respondents'

spare time to make them feel at ease. The results were analyzed quantitatively using percentages.

### 3. Findings and Discussion

This phase is devoted to the data obtained from the questionnaire results that is related to Schmitt's taxonomy of VLS. Every strategy encompasses a set of statements that are shown in the tables and attached by data analysis.

**Table 2.** Learners' Employment of Determination Strategies

Statements	Always	Sometimes	Often	Never
I try to analyze parts of speech	8%	28%	14%	50%
I try to analyze affixes and roots	56%	14%	20%	10%
3. i check L1 cognate	66%	16%	14%	4%
4. i guess from textual context	66%	16%	16%	2%
5. i use a dictionary	30%	36%	30%	0%

The top ratio statement in determination strategy (DET) was in statement number three, where some English words are analogous to that of learners' mother tongue. This resemblance could be an aspect that gave a high percentage of statement three. In this case, the participants succeeded to comprehend the meaning of some words that are exposed to. For example, the students were acquainted with the word 'cornea' because it has the same meaning in their first language in which the word in English refers to the transparent covering of the eye that protects the front of it. In the same line of thought, when there is a resemblance between some words in the first language (mother tongue) and foreign language (English), learners frequently linked a new acquired word in English with its cognate in Arabic. In addition to that, Nation (2001) stated that this similarity helped a lot in vocabulary learning and; smoothed the progress of understanding new words.

Statement four is also placed at a high level where 66% of the respondents selected the statement of 'I guess from textual context' the one that they used most. The reason for this choice is that all the printed texts the students were exposed to were in English. In addition to that, most of the time teachers gave the first chance for learners to guess the meaning of a new word from the context. Another reason is that the meaning of a word in a specific text is not the same as it is mentioned in the dictionary. That is to say, some words have more than one connotation in English and technical words in particular were dissimilar from their dictionary definition. Finally, the last reason is that the text and the context were indicators to guess word meaning. Conversely, the first statement is positioned at a low place since most of the respondents replied by never (50%) because most of them are learning English for specific needs and what they needed most is to know the word meaning without giving much importance to its grammatical form.

**Table 3.** Learners' Employment of Social Strategies

Statements	Always	Sometimes	Often	Never
6. I check the teacher for L1 translation	18%	44%	34%	4%
7. I ask the teacher for paraphrase or synonyms of new words	14%	46%	30%	10%
8. I ask the teacher for a sentence including the new word	36%	22%	40%	2%
9. I ask the meaning of an unknown word from my classmate	10%	24%	66%	0%

As illustrated in table (3) above, statements 9 and 10 were positioned at a high category vis-à-vis social strategies. Respondents' selection for statement 9 showed the students' trust on the teacher's fluency in English. Simply put, they believed on the teacher's capacities and credibility. Another reason is that the teacher's knowledge about words meaning can put learners on the track better than when they checked up words by themselves. This idea was overtly highlighted by Nation (2008, p.12), 'some words are commonly found in certain area but rarely found in other areas'. That is to say, an expert teacher can be able to provide his/ her learners with right and proper meaning of a specific word. Additionally, the existence of classmates gave support to their peers to know words meaning via their interaction which was also a means to understand and remember newly acquired expressions. On the counterpart, statement eight was placed at a lower position where 30% of the respondents selected the option 'often' and 14% of them chose 'always'. The reason behind this low position of this statement was that the learners found the word meaning provided by the teacher was enough for them and what is mostly significant was the meaning per se not its different synonyms.

**Table 4.** *Learners' Employment of Memory Strategies*

Statements	Always	Sometimes	Often	Never
10. I try to connect the word to a personal experience.	4%	32%	32%	32%
11. I associate the word with its coordinates	0%	30%	28%	42%
12. I associate the word with their synonyms or antonyms	0%	58%	24%	18%
13. I do a mind map	10%	44%	26%	20%
14. I place the word in a group with other items based on topic or function.	2%	60%	20%	18%
15. I try to repeat a word aloud or spell it	10%	12%	68%	10%
16. I try to imagine the written form of a word to remember it	12%	38%	46%	4%
17. I use new words in sentences to	28%	24%	44%	4%



remember them				
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As represented in table (4) 3,68% of the respondents replied by ‘often’ and 10% said ‘always’ an overall rate of 78% was given to statement 15 ; which was put at the highest level in comparison to statement 14 where 22% of the participants chose this strategy and it was positioned at a lower level. Learning a word by focusing on its spelling created self-confidence on learners and made them feel at ease. Correspondingly, knowledge of spelling helped learners reminisce the word effortlessly, and write words correctly. To be precise, comprehending word, does not indicate the meaning alone but also the form of the words (Gu, 2003). In opposition, the 22% of the participants selected statement 14 and this ratio illustrated that a word in a particular topic could be available in its different sections and here the topic cannot be a means to make learners remember the meaning of the acquired words.

**Table 5. Learners’ Employment of Cognitive Strategies**

statements	Always	Sometimes	Often	Never
18. I write the word repeatedly	8%	34%	20%	38%
19. I take Notes in class	8%	38%	42%	12%
20. I try to underline the initial letter of the word	4%	34%	54%	8%
21. I write new words in vocabulary notebook	4%	24%	8%	64%

In table 5, (I try to underline the initial letter of the word) was the most frequently selected statement by the respondents, unlike statement 21 in which 12% selected this strategy. 58% of them chose this strategy because highlighting a word helped the students recognize and understand newly acquired words. Additionally, this strategy also played a pivotal role in helping learners reminisce these words easily when they wish for. On the contrary, statement 21 is positioned in a lower level in which taking notes was rarely used by learners and this demonstrated that respondents preferred easy and direct methods of recalling new words.

**Table 6. Learners’ Employment of Meta-Cognitive Strategies**

Statements	Always	Sometimes	Often	Never
22. I use English language media (songs, movies, newcasts, etc.	34%	20%	46%	0%
23. I skip or ignore the unknown word.	6%	54%	28%	12%
24. I continue to study word over time (revise it several times during the day)	12%	50%	30%	8%

As table (6) shows, statement 22 is ranked first where 58% of the respondents preferred this statement. Quite the reverse for statement number 23 that is ranked the lowest where only 34% of the respondents selected this strategy. Besides, a variety of English language media is one way that reinforces the students' retention of new words. The above-mentioned results in table 5 illustrated that the use of English media such as newspapers, websites, videos, etc made the students' recall of vocabulary easier. On the top of that, engaging with English language media provided learners with words in their appropriate context and offered them an opportunity to be autonomous. Conversely, statement (24) is ranked the last. The respondents thought that learning English words was essential because it is their first basic step. The results of this statement demonstrated that the students' possession of English vocabulary facilitated their understanding of words at micro and macro levels.

#### **4. Conclusion**

It is noteworthy that discovering the meaning of new vocabulary is a critical part in English language learning. Besides, the findings of the study make obvious that understanding a language is an effective and valuable way of enhancing students' linguistic repertoire. Moreover, the learners selected strategies indicate that they are likely to use accessible and easily-reached strategies to learn new vocabulary. Last but not least, first year Master students of Biology feel the need to acquire as much specialized vocabulary as possible to enrich their linguistic repertoire, in addition to that the results showed that this group of learners frequently employed social strategies such as: asking the meaning of unknown words from their teacher or classmates, and meta-cognitive strategies namely, the use of English language media (songs, movies, newcasts, etc.). To wrap up, this study could be a point of reference for instructors to support learners who meet difficulties in understanding the word meaning be it common or technical.

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**Appendix 1 : Students' Questionnaire  
(Students Vocabulary Learning Strategies Questionnaire)**

Dear student

The questionnaire is an attempt to discover the strategies that Master students of Biology employ in their vocabulary learning in ESP classes. It will be greatly appreciated if you cooperate with us, your answers are very crucial for the aim of the study and they will be kept confidential.

**a)- Background information** :-Please, tick the appropriate answer

1-Gender :  Male  Female

**b)- Vocabulary Learning Strategies** :-Please tick one appropriate answer

The statements	Always	Often	Sometimes	Rarely	Never
1. I try to analyse part of speech (noun, verb, etc.).					
2. I try to analyse affixes and roots (un-read-able).					
3. I check for L1 cognate (Henna, Imam)					
4. I guess from textual context.					
5. I use a dictionary.					
6. I ask teacher for L1 translation					
7. I ask teacher for paraphrase or synonyms of new words.					

8 I ask teacher for a sentence including the new word.					
9. I ask the meaning of an unknown word from my classmates.					
10. I try to connect the word to a personal experience					
11. I associate the word with its coordinates (desk, table, cupboard).					
12. I associate new words with their synonyms or antonyms (ambiguous- subtle) (ambiguous- clear).					
13. I do a mind map (arms parts of the body shoulders)					
14. I place the word in a group with other items based on topic, theme or function.					
15. I use new words in sentences to remember them.					
16. 24. I repeat a word ( aloud or whisper to myself, in my mind, or by spelling it)					
17. I try to imagine the written form of a word to remember it.					
18. I act out or mime the new word.					
19. I write a word repeatedly.					
20. I use the vocabulary section or glossaries in my textbook.					
21. I use the keyword method (connect the word symbol to the picture.					
22. I take notes in class.					
23. I try to underline initial letter of the word.					
24. I write new words in					

vocabulary notebook.					
25. I use English- language Media (songs, movies, newcasts, etc.)					
26. I skip or ignore the unknown word.					
27. I continue to study word over time (revise it several times during the day ).					