
| RESEARCH ARTICLE

An Intervention-Study on Moroccan High Schoolers' Difficulty in Comprehending Newly Encountered Vocabulary

Far-hat Maryam ¹✉ and **Ouchoud Jamaa** ²

¹*PhD researcher at the faculty of Letters and Human Sciences, Caddy Ayad University, Marrakech, Morocco*

²*Professor at the faculty of Letters and Human Sciences, Caddy Ayad University, Marrakech, Morocco*

Corresponding Author: Far-hat Maryam, **E-mail:** m.farhat.ced@uca.ac.ma

| ABSTRACT

Vocabulary knowledge is an essential component in language acquisition and learning. Such knowledge facilitates the reception, processing, and production of discourse. When the 'know-what' is hindered, learning is not achieved. The present study is conducted to arm EFL learners with 'know-how' strategies to decipher the meaning of newly encountered vocabulary. It is the result of attested observations that students' comprehension and learning are hindered when they do not comprehend a word. Problems persist more when students do reading comprehension, grammar, or communication tasks. The purpose is to enable students with strategies to work out meaning and test the possibility of having those strategies become automated in the students' cognition. For this, the researcher has adopted a quantitative approach to check the rate of students' success at deciphering meaning. The study has three stages: pre-intervention, while-intervention, and post-intervention. The first stage is conducted to attest observations concerning students' comprehension difficulties. Here, the researcher provides a short paragraph with at least 10 difficult words and asks students to clarify them. The while-intervention stage consists of delivering a lesson with a learning objective of training students to use 6 meaning-deciphering strategies adapted from Schmitt's (1997) and Nation's (2001) taxonomies. The post-intervention is a complementary step to check the validity and success of the intervention. As the sessions proceed, learners show success in independent meaning-deciphering using an automated approach. This study shows that learners should be helped not by providing ready information but by equipping them with 'learning how-to-learn' strategies.

| KEYWORDS

New vocabulary items, comprehension difficulty, reading, automated strategies

| ARTICLE INFORMATION

ACCEPTED: 19 February 2025

PUBLISHED: 03 March 2025

DOI: 10.32996/jeltal.2025.7.1.18

1. Introduction

Vocabulary is one kernel component of language learning and teaching. It facilitates the processing of other skills such as reading and listening. In other words, a person who lacks a certain linguistic repertoire of a certain language would be unable to produce a comprehensive discourse in that language; and a person who has limited knowledge of vocabulary in a written discourse is a person whose understanding of the latter is likely to not be achieved. Indeed, "researchers estimate you need to know 95%-98% of the words of a text in order to understand it satisfactorily (...)The most recent studies suggest nearer 98% (Schmitt & Schmitt, 2012). But probably less for informal spoken discourse." (Penny Ur, 2012, p. 2). Thus, a student whose linguistic repertoire is enriched with different frames of vocabulary is a student whose fluency and competency are likely to

Copyright: © 2025 the Author(s). This article is an open access article distributed under the terms and conditions of the Creative Commons Attribution (CC-BY) 4.0 license (<https://creativecommons.org/licenses/by/4.0/>). Published by Al-Kindi Centre for Research and Development,

London, United Kingdom.

enlarge. This generalization stems from the fact that vocabulary is one essential component of language knowledge. According to Bachman (1990), language competence is composed of two major elements: organizational competence (grammatical and textual) and pragmatic competence (illocutionary and sociolinguistic) (p. 87); vocabulary falls within the grammatical component of organizational competence. Knowing a word is broad a concept. According to Coady & Huckin (1997), the knowledge of a word includes other subcomponents such as the form (pronunciation and spelling), the structure (the morphemic engineering of the word), and the meaning. Thus, the complexity and sub-layering of vocabulary items make the task of understanding them even much challenging for beginners.

In the case of Moroccan high school students learning English as a foreign language, learners seem to lack the know-how to decipher the meaning of a new piece of language they encounter. Moreover, they cannot memorize all the newly encountered vocabulary. The latter is a trait of the abandoned grammar translation method which, according to Richards & Rodgers (2001), constitutes a "tedious experience of memorizing endless lists of unusable grammar rules and vocabulary" (p. 4). According to Laufer B (1997), the learnability of novel words is influenced by a number of factors such as length and morphology (inflectional and derivational complexity).

Subsequently, students are in greater need for learning the how-to-learn skills. In the case of dealing with newly encountered vocabulary, students should be taught how to decipher the meaning on their own without either passively receiving its meaning from the teacher or not understanding it at all. Sokmen (1997) assumes that promoting deep-level processing and encouraging independent learning are effective strategies in teaching new vocabulary. The present research will be investigating the before and aftermath of introducing certain strategies for promoting the skill of learning how-to-learn and decipher unknown word-meaning. The strategies will be adapted from Schmitt's (1997) and Nation's (2001) Taxonomy of Vocabulary Learning Strategies (henceforth, VLS); specifically, the determination strategies of Schmitt (1997) and the sources general classes of strategies of Nation (2001).

The choice of the topic follows the observations of Moroccan High school students' difficulty in dealing with newly encountered terms. It has appeared to the researcher that students' learning and understanding is hindered by their incapability of getting the meaning of newly encountered vocabulary items. This is even greater when students are in a reading or listening activity where they lag behind as they cannot know what the newly encountered lexic unit means. The aim of this research is to measure to what extent the students: are capable of using the different meaning deciphering techniques and strategies to adapt them to different morphemic structures and have made it a worshiped study skill, and to what extent have these strategies been helpful in reducing the difficulty in understanding the written and spoken discourse. This research targets two main questions:

- 1- How can high school students overcome the difficulty in understanding the meaning of newly encountered vocabulary?
- 2- To what extent can they adopt the meaning deciphering strategies to an automated level?

2. Literature Review

2.1 Learning and Teaching the English Language

2.1.1 A Brief Definition of the English Language

Language is the first and everlasting invention of humans. Humans had names for tools, animals, plants, and all that surrounds. From this, the language system grew much complicated. Vocabulary has expanded with the need for verbs and descriptive words and with the use of rules to make speech coherent and mutually understood by a certain community of speakers. Language is thus a system of communication that is built on the harmonic combination of sounds, words, sentences, and grammatical rules. The English language is one universal system of communication that has lately gained the label of a "lingua franca" (Harmer 2007). It is currently spoken by 1.35 billion inhabitants in the world, of which 360 million people are native speakers (Lyons, 2017). The English language is an Indo-European language that originates from the colonial Germanic tribes conquering Britain in the 5th century (Barber et. al, 2000). It has grown from a newly born Old English building most of its vocabulary from Norman French and German to a today world language thanks to a number of factors such as the invention of printing, the standardization of language, and the vast movement of English speakers to explore parts of the world. Becoming a powerful and universal language, an urgent need for learning, and thus teaching, the English language has grown. Accordingly, many governments and ministries of education opt for the English language to be taught in the curriculum. This is thanks to its usefulness in many education and business fields.

2.1.2 Language Learning

Learning is a permanent character of creatures. This endeavor is never ceased for it enables creatures to keep up with life changes. Humans are learners by nature. Generally, Learning is the unconscious and internal process whereby certain knowledge is internalized into the mind of a receiver. This knowledge comes as a result of the learner's interaction with an experience or body of know-what and know-how. It simply occurs when new information is absorbed and accumulated into the brain and the memory, especially the long-term one. Through this process, a learner gains the capacity of making sense to things and substances that were unknown to them, characterizing and organizing them into frames of thought that are known to them, and

then gaining the ability of retrieving this knowledge whenever needed. Learning can thus be seen as a gradual mechanism and state of change. It is the state whereby competence increases and performance develops.

One very eloquent example of learning is language learning. Accordingly, researchers assume that babies learn any language they are exposed to very easily when they are less than five years old (see Chomsky, 1986 and Vygotsky, 1962). At first, language learning is just a state of reception of voices and consumption of linguistic components. The newly born receives lexemes and builds the L-1 lexicon from the surrounding native speakers. Listening- the first receptive skill- is the direct lead to speech- the first productive skill-. Crystal (1987) explains the different stages of speech production. According to him, language that has been received through the ears and stored into frames of knowledge takes the first shape of speech production: 'babbling'. This occurs at around the 6th month of the life of a child. Before this, the vocal cords and speech mechanisms of the child were already trained by the child's cries for personal needs and parental care. Thus, for a person to 'know' the language, they must receive and comprehend it auditorily – or visually in the case of sign language- and make 'sense' of its sound, grammar, and meaning combination rules then reproduce it accurately.

In the case of the English language as the learnt language, the learner has to learn 20 vowels and diphthongs and 24 consonants. Then, they have to acquire the language specific permissible sounds combinations. This is to avoid disallowed outputs that the language does not tolerate. Once sounds are combined into words, the learner then has to be aware of the grammatical constructions governing the identity of each morphological structure. Knowledge then is enlarged to prosodic and suprasegmental features such as the intonation, speed, stress and tonality. At a later stage, the language learner starts to make sense of the different types of meaning which could be direct or elusive.

2.2 Learning and Teaching Reading

2.2.1 What is Reading

Reading can be defined as the process whereby a 'reader' makes 'sense' of the meaning of a written text. Scientifically, it is agreed that the Broca's area, an area located in the left hemisphere, is the one that is responsible for language perception and production. Accordingly, "the left frontal lobe of your brain activates to understand letters and words. The anterior temporal lobe then analyzes the flow of words and their tense. Lastly, the limbic system activates emotions for you to accept and retain information" (Iris Reading, 2003). According to them (ibid), when reading starts, a very complex mind process begins. First, the brain visualizes the word and then breaks it into smaller constituents: syllables and phonemes. Once the recognition of sounds of the word is completed, the brain begins another process of meaning recognition with the help of the occipital temporal region in the temporal lobe. Simultaneously, the angular and supramarginal gyrus function to boost the brain into performing continuous reading. Apart from sounds recognition, the frontal lobe also works to decode morphological and syntactic structures of words and know their category. Then, the text comprehension process begins where the brain looks at the semantic enterprise of the words and links them to conceptual frames in the cognition.

Generally, there are two major types of reading: extensive and intensive reading. According to Harmer (2007), in extensive reading, "a teacher encourages students to choose for themselves what they read and to do so for pleasure and general language improvement" (p. 283), whereas intensive reading is where "is often (but not exclusively) teacher-chosen and directed. It is designed to enable students to develop specific receptive skills such as reading for *gist* (or general understanding - often called *skimming*), reading for *specific information* (often called *scanning*) ..." (p. 283). Harmer (ibid) thus includes receptive skills as part of intensive reading. Those skills are also seen as reading strategies. 'Skimming' is the reading strategy that uses clues- topic sentence, pictures, or title- to get the gist of the general meaning of a script. This strategy namely answers one question: what is the text about? 'Scanning' is another strategy that readers follow to look for certain pieces of information in a text. This strategy targets different sub-questions and details. Then comes 'reading for details'. Its objective is the general understanding of the text. However, this is achieved not through clues, but via processing the text deeply.

Reading can be motivated by a number of reasons. For example, one could read for academic purposes. This is called reading for learning where academic discovery is the purpose, uncovering how to do things they do not know, doing research, etc. One could also read for personal needs such as checking reviews to buy a certain article or chose a certain destination. Reading could also more simply be done for pleasure. Libraries give tons of great entertaining literature for starving minds to consume. But regardless of the kind of purpose, there will always be a purpose for reading.

2.2.2 Learning Reading

Reading is one of the four global language skills that humans develop in their quest for communication. It is a receptive skill that revolves around the consumption and oral realization –at times- of a produced written text. Learning to read is different from learning to speak in the sense that speech production is developed through auditory speech reception and oral speech practice. Reading on the other hand, requires interaction with a written text. Learning to read is a requires practice, time and effort. Considerable body of research has been carried out to uncover how children and illiterate adults learn how to read. There are two traditional theories explaining this. The first claims it to be a 'natural process', that is, reading is a human faculty just like walking and speaking. When the learner is surrounded by enough stimuli, such as good books or reading podcasts, they can

develop the reading skill quite easily. The opposing theory states that reading is an outsider skill that requires “a series of strategic guesses based on context”. This simply means that for reading to be learned, there has to be a considerable effort on the part of a teacher. However, none of the past theories were proven successful. Generally, for a person to learn reading, they have to be aware of the subcomponents of the language system. Said in other words, the reader has to be acquainted with the graphological, phonetic, lexical, grammatical and semantic levels of the language under reading. An easy step into reading is that the language that is read be related to the reader’s spoken language in the sense that they have to be familiar with the written words. Indeed, when the learner is already familiar with the phonetic realization and semantic equivalent of the word, all that is left is the recognition of graphemes and letters. Thus, the first step into learning how to read is learning how to decode the ‘systematic phonics’ on a page and realize them out loud. A reader should first know the different sounds (consonants and vowels) in the target language so as to link the sounds to the printed graphemes and read the words. However, the writing system is much complicated. Generally, there are four types of writing systems: logographic, syllabic, alphabetic, and featural systems. The orthography is logographic when the characters of a script stand for a morpheme, i.e., a meaningful unit. The Chinese writing system which uses tone and pitch to convey meaning is based on logograms. The orthography whose characters represent a syllable is called syllabic. Japanese is one syllabic language whose graphemes and linked arbitrarily to allophones. The alphabetic writing system are quite simpler in that single letter represent sounds. As for the featural writing system, graphemes only carry some features of the sound such as voicing. Knowing the types of writing system is the first key into deciphering a script. Byrne & Fielding (1991) explain in details the importance of phonemic awareness by conducting an experiment on young children. They (ibid) showed them certain words and taught them how to realize them verbally. Then, the researchers changed the words with other orthographic scripts. As expected, the young children could not decode the graphemes. This experiment has proven the importance of developing a phonemic awareness before getting involved into the process of reading. Partridge (1992) discusses the educational problem of awareness in her paper. She (ibid) quotes Bryan & Hallahan (1981) as they assume “that good and poor readers may be discriminated by differences in their conscious awareness of the fact that individual sounds make up words; that poor readers are less aware of the structure of words.” (p.1). Once the skill of decoding script and linking printed letters to allophones is acquired, the reader has to move into the acquisition of the meaning of printed words. That is, semantic awareness must be developed through knowledge of vocabulary. The latter, just like speech, requires considerable stimuli and exposure to authentic target language, either printed or uttered. Once decoding characters and meaning is done, the reader explores reading into the fullest and reverses the process of learning reading into reading for learning and other purposes.

2.2.3 Teaching Reading Comprehension

Before defining what teaching reading is, a distinction must be stated between the two main approaches into ‘reading’ a text. The first one is a simple codes-deciphering process where the reader performs a transferring of a grapheme into acoustic segments. Here, teaching reading would simply be defined as showing the phonemic correlates of each segment as they occur in isolation or in running speech. The second approach goes beyond phonology into semantics. It is the so called ‘reading comprehension’ which involves comprehensive processing of a text. In this case, the teaching demands other analytical strategies for readers to deal with a text. This research tackles the second approach into ‘reading’; i.e., ‘reading comprehension’. The latter is the outcome cognitive representation that the reader achieves as a result of mental processes of linking fragments from the text to parts of the reader’s cognition and background (Kintsch & van Dijk, 1978, Gernsbacher, 1991, van den Brock et.al, 1996 to cite but a few). According to van den Broek & Helder (2017), this linking relies on “referential, causal/ explanatory, and logical coherence.” (p. 361). Thus, the process of reading comprehension relies heavily on the brain’s capacity of linking cognitive frames of knowledge to parts of the lexicon. There has been a plethora of research showing the importance of cognitive processes in reading comprehension. Scholars present different models of text comprehension to explain this process. Among these are Kintsch & van Dijk’ (1978) Interactive Model of Comprehension which views text comprehension a going through cognitive cycles of decoding and relating microstructure to macrostructure by relying on working memory; Gernsbacher’s (1991) Structure-Building Framework where “the goal of comprehension is to build a coherent, mental representation, or structure of the information being comprehended.” (Gernsbacher, 1991, pp 217-263) through using cognitive processes of mapping vocabulary into established frames of knowledge; and Zwaan’s (2003) Immersed Experiencer Framework which builds on the previous models and views and proves the strong link between the brain, henceforth the cognition, and elements of a text. For all this, any attempt at theorizing, henceforth, practicing teaching reading comprehension should start from the prioritizing the cognitive component of the enterprise. Thus, it should target cognitive processing skills. Generally, the teaching of reading comprehension should take a ‘strategic’ path into endowing beginners with comprehension skills. The latter should become ‘automated’ when the reader reaches an advanced level. By ‘strategic’, the researcher refers to a collection of processes needed for linking elements of a text to the cognition. By ‘automated’, the researcher describes the effortless mental processing the reader comes at after being relentlessly used to strategic processing. According to Harmer (2007), there exist two major approaches into teaching a receptive skill such as reading. The first one directs the learner into

focusing on the text comprehension as a whole whereas the second is details oriented and is directed towards specific information in the text. But, regardless of the approach, it always begins by a 'lead in'. "This is where we engage students with the topic of the reading and we try to activate their *schema* (plural *schemata*), a term which was best described by Guy Cook as 'our pre-existent knowledge of the world' (Cook 1989: 69)." (p. 271). This schema can best be defined as the sum total of knowledge that pre-exists experience as a result of our experience of the world. The reading text must always be of interest to the student and pertain, in a way, to what they know about the world.

Harmer (1998) suggests six major principles that teachers should abide by in teaching reading. The first of which is encouraging students to practice reading more often. This is to make the skill sink more and become a habit. The second principle is that students be engaged with what they read. This point relates to the choice of the reading material. Put differently, the teacher does not have only to choose texts that pertain to the curriculum, but also texts that appeal to the interests and needs of the students. The third principle says that teachers should encourage students to engage with the script emotionally and not just mechanically. This means that students have to learn how to express their feelings and impressions on the content. The fourth step is to help learners predict the content of the text. This is done through many ways such as using clues like pictures accompanying a text or the title. The fifth principle into teaching reading is the choice of tasks accompanying the reading text. This falls within the reading comprehension tasks which target different details of the text. The last strategy that Harmer (ibid) gives to teachers is that they use the reading material to its fullest extent. This means they have to use whatever strategy or task is available to benefit from the piece of reading.

Harmer (1998) differentiates between different reading activities. Among these is the 'guided reading'. The latter, as the name implies, requires guidance from a supervisor- a teacher in this case- who helps and directs students into becoming good readers. This strategy of teaching reading has three major stages. The first one is pre-reading where the teacher creates an interest and need for reading, calls for readers' schemata to ensure they relate to the topic, and sparks prediction making capabilities using clues from the script. The second step is the actual reading where the teacher listens to reading performances and asks different questions to measure their engagement with the script. The last step in guided reading is where the teacher checks the global understanding of the meaning of the text. Other reading activities include 'jigsaw reading' where reading is embellished with fun. Here, students are split into groups, given chunks from texts, and asked to decode the separate meanings and then they share their different versions of understanding. This relates in a way to 'reading puzzles' where a text or a story is divided into parts and readers must assemble the parts in the correct order. There is also the 'play extracts' where readers practice their suprasegmental speech realization skills such as monitoring the right speed and intonation.

2.3 Vocabulary Discovery Strategies

The processing of codes and the comprehension of segmental units is a striking difficulty for students. This occurs at the level of single words or above them- i.e., on a phrase, sentence or whole text level. When the student does not understand a key word in a text, they are likely not to extend their knowledge to what is above the word, i.e., the phrase, the sentence, and the whole text. Difficulties generally relate to the reader's inability of cognitively representing elements of a text due to lack of a semantic 'sense' or 'reference'. Put differently, the reader finds no stored correlates of the text's elements in their cognitive frames of that language or general knowledge. Thus, the situation would translate into a 'tabula rasa'; i.e., a blank state when reading an element of a text.

Efforts to provide an aid in a thorough cognitive processing of uncomprehended vocabulary items can best be represented in taxonomies. The latter are general frameworks briefing hierarchal processes into achieving a certain objective. In this line of research, and given that vocabulary deciphering strategies must begin from an emphasis on some vocabulary learning and teaching strategies, it is more adequate to review and adapt some taxonomies of vocabulary learning strategies (henceforth VLS); namely Schmitt's (1997) taxonomy of VLS and Nation's (2001) Taxonomy of VLS. The former was the result of a vocabulary learning study in a Japanese EFL context. The taxonomy consists of two stages: discovery and consolidation. The discovery stage is where the reader first encounters a word with no semantic correlation. Thus, the reader would have a blank state when attempting a cognitive representation. Following Schmitt (1997), the discovery stage could be done using one of two strategies: determination and social strategies. The former is about discovering the meaning of vocabulary without recourse to others. It encompasses strategies such as analyzing affixes of roots, checking for L1 or L2 cognates, guessing from textual context, the sound association, its use in the sentence, and possible synonyms or antonyms (Schmitt, 1997). The latter revolves around working out meaning with recourse to others. This includes asking others for translation, explanation or examples. As for the consolidation stage, it comes after the discovery as a certainty and stabilization process in memory. Nation's (2001) Taxonomy of VLS encompasses three general classes of strategies: planning, sources, and processes. Planning is about choosing elements of vocabulary to focus on and the strategies to deal with them. Sources are about discovering the vocabulary item through strategies like analyzing word parts, making use of contextual information, or by reference to L1/L2 by using dictionaries for instance. Processes are the final stage of learning vocabulary which concerns consolidation, memorizing, and employment of the learnt vocabulary.

In both taxonomies, it appears that cognitive comprehension process of vocabulary; be it a discovery or a sources class of strategies, generally involves the same procedures that target a certain linguistic component of the vocabulary item. Proposals in this line mainly start from the morphological unawareness of readers which is a primary lead into incompetence. For words to be processed, the reader has to be acquainted with the three components of vocabulary knowledge (Nation, 2001, p. 27): the form, the meaning, and the use of the word. The form of the word includes the acoustic, phonetic, and morphological composites. The meaning refers to the semantic correlates of the word and/or its parts. As for the use of a word, it mainly includes the grammatical and collocational aspects and rules of employment.

3. Methodology

The present study adopts a quantitative method of inquiry to investigate the problem of uncomprehended vocabulary and the implementation of vocabulary discovering strategies. It uses a control group and an experimental group. The experimental group is the one which is subject to the intervention. Their performance deficiency is first measured and attested using task A (see appendix), then an intervention seeking performance change is started. As for the control group, participants are subject to all tasks like the control group, except that no intervention is made to change their performance. The control group, is used to ensure the validity and effectiveness of the intervention. The present study builds on the discovery stage of Schmitt's (1997) taxonomy of VLS and the sources general class of strategies of Nation's (2001) Taxonomy. Both Schmitt's (1997) and Nation's (2001) taxonomies can be adapted to vocabulary discovering and can thus be summarized as involving the following six strategies that the researcher took action with:

1. Take a guess: The reader must quickly predict the word's meaning and then use reason to think about the validity of the meaning they assigned. In case it does not fit the context and the clues, the reader must move forward to the next strategies.
2. Break the element up into pieces: a linguistic insight into the morphological engineering of words reveals their composition of at least one morpheme. Thus, words can be monomorphemic (e.g., thank), bimorphemic (e.g., thankful), or multimorphemic (e.g., thankfulness). The reader must be aware of the two concepts of 'root' and 'affixes'. The former is the kernel part of a word that builds the core meaning and to which 'affixes' are attached to add other shades of meaning. The most common prefixes and suffixes are: re-, un-, pre-, il-, sub-, -er, -or, -est, -ful, -less, -ness, -hood.
3. Use context clues: this involves making use of synonyms and antonyms as well as other context clues.
4. Make connections to L1/ L2: this is simply about making reference to the reader's mother language of second language cognates which are likely to resemble the target vocabulary element in terms of sound and meaning.
5. Make sound associations: this strategy is about guessing the meaning of words from how they sound. Some words appear to be onomatopoeic. Thus, the reader could figure out the link between the phonetic and the semantic levels of a word.
6. Look it up in a dictionary/ Pictionary: the last strategy- and least favored- is consulting a hardcopy or online dictionary to discover the new word.

3.1 Participants

The experimental group data consists of 125 student-participants chosen from two levels: first baccalaureate students: 30 science stream students and 50 human sciences stream students and 45 common core human sciences students in Oulad Amrou high school. The students' rate of understanding difficult and new vocabulary will be tested before teaching them how-to decipher meaning on their own and after the intervention process using worksheets with different vocabulary items. As for the control group, data consists of a common core science stream class holding 31 students in Oulad Amrou high school. The participants' rate understanding difficult and new vocabulary is tested without intervention.

3.2 Local and Time of the Study

This research was conducted at Oulad Amrou high school- a school in the province of Kelaat Sraghna city. The intervention was taken after noticing students' struggles processing reading comprehension texts or even grammar or functions related tasks given some newly encountered lexical item. Thus, an action was initiated for the experimental group in February, 2023 and lasted for five weeks. By the end of the fifth week, students were given a whole text fragment with unprecedented – with reference to their textbooks- vocabulary items to conclude the inquiry by the beginning of March.

3.3 Instruments and Procedure

To realize this research, participants from both the experimental and control groups are subject to task A (appendix). Then a lesson plan targeting the experimental group is designed to teach the six most relevant vocabulary discovery strategies as adapted from Schmitt's (1997) and Nation's (2001) taxonomies summarized as involving the following six strategies that the researcher used: First take a guess, Break the element up into pieces, use context clues, make connections to L1/ L2, make sound

associations, Look it up in a dictionary/ Pictionary. Along with the lesson plan, controlled practice tasks were organized for some sessions each week. The tasks were a compilation of five sentences, with each one including at least one new vocabulary element - as far as textbooks are the reference- to the readers. In the fifth week, the students were handed a short paragraph with embedded new vocabulary items that would definitely need a dictionary for explanation and is presented as single words. This was to raise the scope for readers to get more automated with the vocabulary discovery strategies. For each of the five sessions that included the relevant tasks, students were asked to explain the meaning of the difficult vocabulary and to mention the adopted strategy from the six ones. The researcher then counted the number of students who managed to discover the vocabulary and clarify it as well a note those who expressed clear choice of the strategy.

3. 4 Data Analysis and Results

Data for this research are collected at two levels for the experimental group: before the intervention and after the intervention. Before the intervention, the researcher tests students' ability of vocabulary discovery before introducing the strategies the six strategies. This is done by presenting a short paragraph (task A, Appendix) and having them explain the difficult vocabulary. As for data collected after the intervention, the researcher administers short controlled tasks (B, C, D, and E- Appendix) to check students' scores using strategic vocabulary discovery techniques and the level of those strategies' automation. As for the control group, tasks which participants are subject are limited to task A- pre-intervention- and task E -post-intervention- to have comparative data.

Table 1

Percentages of students' scores on task A of vocabulary discovery:

class		discovery rate of the vocabulary item										
		0 item	1 item	2 items	3 items	4 items	5 items	6 items	7 items	8 items	9 items	10 items
Experimental Group	CC-HS	15.5 %	20 %	13.3 %	24.4 %	15.5 %	6.7 %	4.4 %	0 %	0 %	0 %	0 %
	1 Bac-ExS	6.67 %	13.3 %	6.67 %	13.3 %	10 %	26.7 %	10 %	13.3 %	0 %	0 %	0 %
	1 Bac-HS	32 %	24 %	8 %	12 %	8 %	12 %	0 %	4 %	0 %	0 %	0 %
	1 Bac-HS	16 %	28 %	20 %	8 %	12 %	4 %	4 %	8 %	0 %	0 %	0 %
Control group	CC- ExS	9.7 %	29.03 %	6.5 %	22.6 %	16.13 %	9.7 %	6.5 %	0 %	0 %	0 %	0 %

Table 1 shows the scores that the 5 classes- both experimental and control group- had before any intervention. It has tested their vocabulary discovery ability using a paragraph with ten comparably new- to the learners- vocabulary elements. The latter are the following: uneventfulness, boring, unusual, arresting, content, Ballet, Consulate, Emirates, chemistry, Bachelor's Degree. Some students exhibited difficulty in understanding other vocabulary items such as 'weekend'. But generally, the average rate was at least ten new vocabulary elements. As shown in table 1, no student from the four classes was able to discover 8 or more vocabulary items. For the common core, students were unable to comprehend 7 or more items. Only 4.4 % of the experimental group and 6.5 % of the control group managed to understand 6 items. 20 % and 29.03 % of the control group of the experimental group understood at least 1 vocabulary element. Only a few of both common core classes groups scored zero in this task. As for first baccalaureate experimental sciences, a percentage of 26.7 % were able to process at least 5 items in the paragraph. 13.3 % managed to unveil 7 items. However, a total of 6.67 % of them were unable to comprehend any of the vocabulary elements. As for the 2 classes of first baccalaureate human sciences, none of the students was able to discover the meaning of 8 or more items. Only 4 % of the first class managed to work out 7 items with the second class having 8 % of students doing so. A total of 32 % in the first class and 16 % in the second exhibited their inability to discover the meaning of any of the 10 items.

After having tested the percentages of students' scores on task A of vocabulary discovery before the intervention, the researcher documented the experimental group' scores after the intervention for each of the 5 remaining tasks (B, C, D, and E (see Appendix)). This included both their rate of vocabulary discovery as well as their strategy choice.

Table 2:

Percentages of the experimental group' scores on task B of vocabulary discovery:

Class	discovery rate of the vocabulary item						Choice of strategy	
	0 item	1 item	2 items	3 items	4 items	5 items		
Experimental Group	CC-HS	4.4 %	11.1 %	15.6%	17.8%	31%	20%	95.6 %
	1 Bac-ExS	0 %	10%	6.7%	16.7%	20%	40.7%	100 %
	1 Bac-HS	0 %	0%	8%	20%	32%	40%	100 %
	1 Bac-HS	0 %	4%	12%	16%	20%	48%	100 %

Table 2 shows the rate of students' achievements in vocabulary discovery on task B (appendix). The target elements were 5: belie, gaffe, vying, fancy, and overjoyed. Students were asked to explain the vocabulary item and mention the discovery/ sources strategy adopted from the six strategies. Only 2 common core students were unable to complete the task. None of the students in the three remaining classes faced difficulty in comprehending at least one comparably new vocabulary item. For instance, they all managed to understand what 'overjoyed' meant using the contextual clues strategy. In the three classes, 40% to 48% of the students completed the task successfully. In other words, they managed to comprehend the 5 vocabulary items. As for the strategies, almost all students exhibited an awareness of the adopted strategy. That is, students followed a discovery process using the strategies until they found a suitable one for explanation and comprehension. Most of the strategies used were making a guess, using context clues, and referring to L1/L2 cognates.

Table 3:

Percentages of the experimental group' scores on task C of vocabulary discovery:

Class	discovery rate of the vocabulary item						Choice of strategy	
	0 items	1 item	2 items	3 items	4 items	5 items		
Experimental Group	CC-HS	0 %	6.7 %	33.3 %	56.7%	46.7%	4.44%	100 %
	1 Bac-ExS	0 %	0%	10%	20 %	40%	33.3%	100 %
	1 Bac-HS	0 %	0%	8%	24%	48%	24%	100 %
	1 Bac-HS	0 %	0%	20%	24%	36%	20%	100 %

Data for table 3 concern the following 5 vocabulary items taken from task C (Appendix): asperity, incontrovertible, puissant, ballroom, and fireball. As demonstrated in the table above, all students in the 4 classes arrived at a successful discovery of the vocabulary item. Only 2 common core students discovered only 1 vocabulary items while none of the 3 remaining classes was limited to this number of items. Almost half of the 4 classes managed to process 4 vocabulary items, with the fifth one- asperity- being comparably more difficult for most students. However, 33.3% of first baccalaureate experimental sciences students managed to unveil its meaning. In all cases, students were successfully able to choose the accurate strategy for their discovery. The most used strategies were making a guess, using context clues, and referring to L1/L2 cognates, and analyzing word parts.

Table 4:

Percentages of the experimental group' scores on task D of vocabulary discovery:

Class		discovery rate of the vocabulary item					Choice of strategy	
		0 item	1 item	2 items	3 items	4 items		5 items
Experimental Group	CC-HS	0 %	0 %	33.3 %	56.7%	46.7%	4.44%	100 %
	1 Bac-ExS	0 %	0%	6.7 %	10%	26.7%	56.7 %	100 %
	1 Bac-HS	0 %	0%	8%	8%	36%	48%	100 %
	1 Bac-HS	0 %	0%	4%	8%	28%	60%	100 %

Table 4 shows data collected for the four classes' rate of vocabulary discovery as they do task D (Appendix). The words concerned are the followings: unknowledgeable, crosswalk, repairman, weave, and camels. The table demonstrates students' success at discovering at least 2 vocabulary items using one of the strategies. It is also showing that a rate of 48% to 60% of students managed to successfully unveil the meaning of the 5 vocabulary items. Strategies they resorted to were the followings: making a guess, using context clues, and referring to L1/L2 cognates, and analyzing words morphemes. The analysis also shows students' tendency towards quickly choosing the right strategy for a given vocabulary element.

Table 5:

Percentages of students' scores on task E of vocabulary discovery:

Class		discovery rate of the vocabulary item					Choice of strategy	
		0 item	1 item	2 items	3 items	4 items		5 items
Experimental Group	CC-HS	0 %	0 %	6.7 %	11.1%	20%	62.2%	100 %
	1 Bac-ExS	0 %	0%	0 %	16.7%	20%	63.3%	100 %
	1 Bac-HS	0 %	0%	4%	12%	16%	68%	100 %
	1 Bac-HS	0 %	0%	0%	16%	12%	72%	100 %
Control group	CC- ExS	90.3 %	0 %	9.7 %	0 %	0 %	0 %	0 %

This table gathers data for the post intervention task. Both the experimental and control groups are subject to this task. It concerns a short paragraph with the following embedded difficult vocabulary items: moozled, garrulous, spellbound, Mahogany bureau, and midsummer. As shown in the table, all students in the experimental group managed to use a certain strategy to discover at least 2 vocabulary elements with 2 first baccalaureate classes comprehending a minimum of 3 items. More than 62.2 % of students in the four classes discovered the meaning of all vocabulary items in the paragraph. As for the control group, only 3 students (9.7 %) managed to understand the meaning of 2 lexical items (Mahogany bureau and midsummer) whereas 28 students (90.3 %) could not decipher any of the 5 lexical items.

4. Discussion and General Conclusion

The present research was conducted as an intervention after observing students' difficulty in processing reading comprehension texts or even simple grammar or functions related tasks. Students struggle with making cognitive semantic correlates to one and always more words in a written text. The difficulty thus extends to the receptive skill: listening. When students fail to make a 'sense' or 'reference' to a word, learning is not fully achieved given the difficulty. This research came as a response to the current problem of arming students with strategic processes for discovering the meaning of new vocabulary. The endeavor adapts Schmitt's (1997) and Nation's (2001) Taxonomy of VLS; specifically, the determination strategies of Schmitt (1997) and the sources general classes of strategies of Nation (2001). Both strategies provide cyclic processes to unveil the meaning of a certain vocabulary element. The teacher summarized the strategies in the following six: take a guess, break the element up into pieces, use context clues, make connections to L1/ L2, make sound associations, look it up in a dictionary/ Pictionary. The aim was both to reduce students' difficulty and dependency on the researcher as the resource provider. Students were capable of targeting a

certain component of the word- form, meaning, or use- with very simplified and clear steps. This plan enabled them to work out meaning, moving from strategic processes to merely automated ones. By the end of the fifth week, students no longer needed to go back to the lesson to check the strategy or spend time going through them in order; instead, the moment they saw difficult word, they worked out meaning, then they started explaining the different strategies that could be used for the same word. This means that strategies became, to a good extent, automated skills in the cognition of the learners.

The pre-intervention showcases that students face a number of problems understanding reading content. Students had no clue how to deal with the one new word that made comprehension unachievable for them. For a tangible and attested documentation of the researcher's pre-intervention observations on the inquiry, the researcher exposed students to a paragraph with- at least 10 difficult words and had them explain them. The results matched to a great extent the observations and expectations given the students' low scores, as shown in table 1. Also, the researcher had a control group be subject to the pre-intervention task and the final task E to compare its performance and that of the experimental group. This was to ensure the validity and effectiveness of the action. For the intervention, the researcher designed a lesson plan to introduce 6 different strategies for decoding the meaning of a new word in a written discourse. Then the researcher designed a controlled task to ensure students' assimilation of the strategies. During the intervention, students started to establish a certain awareness of the three components of the word: the form, the meaning, and the use. As the weeks progress, students exhibited more awareness in adopting strategic techniques to deal with any vocabulary they encountered, either in the research related tasks or the lessons related ones. In the post- intervention, the researcher kept assessing students' performance whenever a new word was encountered to check their development. Generally, the experimental group developed their own strategic based ways of unveiling the meaning of vocabulary items. On the other hand, the control group showed concrete failure in deciphering any of the five lexical items in task E. This is simply due to their lack of strategies that show efficiency in the case of the opponent group.

To conclude, it has been observed that Moroccan EFL textbooks dedicate little to no 'know-how' techniques for students when it comes to performing the simplest comprehension tasks. Even beginners' textbooks begin with comprehension tasks such as skimming and scanning. The latter requires full comprehension of a written discourse; the thing that is far from being achieved on real grounds. Textbooks only include some word formation lessons that target the morphological engineering of words composed of roots and affixes. But generally, no aid is being given. Thus, the objectives of learning are never achieved to their fullest. The present research serves as a pedagogical insight into solving one persistent leaning problem: vocabulary comprehension; and through it, it would solve other learning problems such as grammar or functions related tasks.

Funding: This research received no external funding

Conflicts of Interest: The authors declare no conflict of interest

ORCID iD <https://orcid.org/0009-0008-1973-6321> (Far-hat Maryam)

Publisher's Note: All claims expressed in this article are solely those of the authors and do not necessarily represent those of their affiliated organizations, or those of the publisher, the editors and the reviewers.

References

- [1] Bachman, L. F. (1990). *Fundamental considerations in language testing*. Oxford University Press.
- [2] Barber, C. (2000). *A history of the English language*. Cambridge University Press.
- [3] Byrne, B., & Fielding-Barnsley, R. (1991). Evaluation of a program to teach phonemic awareness to young children. *Journal of Educational Psychology, 83*(4), 451-455. <https://doi.org/10.1037/0022-0663.83.4.451>
- [4] Chomsky, N. (1986). *Knowledge of Language: Its Nature, Origin, and Use*. New York: Praeger.
- [5] Coady, J., & Huckin, T. (1997). *Second language vocabulary acquisition: A rationale for pedagogy*. Cambridge University Press.
- [6] Crystal, D. (1987). Towards a 'bucket' theory of language disability: Taking account of interaction between linguistic levels. *Clinical Linguistics & Phonetics, 1*(1), 7-22.
- [7] Gernsbacher, M. A. (1991). Cognitive processes and mechanisms in language comprehension: The structure building framework. *Psychology of Learning and Motivation, 21*, 217-263. [https://doi.org/10.1016/s0079-7421\(08\)60125-5](https://doi.org/10.1016/s0079-7421(08)60125-5)
- [8] Hallahan, D., & Bryan, T. (1981). Learning Disabilities. In J. M. Kauffman & D. P. Hallahan (Eds.), *Handbook of special education*. Routledge.
- [9] Harmer, J. (1998). *How to teach English*. Longman Publishing Group.
- [10] Harmer, J. (2007). *The practice of English language teaching* (4th ed.). Longman Publishing Group.
- [11] I. S. P. Nation. (2001). *Learning vocabulary in another language*. Cambridge University Press.
- [12] Kintsch, W., & Van Dijk, T. A. (1978). Toward a model of text comprehension and production. *Psychological Review, 85*(5), 363-394. <https://doi.org/10.1037/0033-295x.85.5.363>
- [13] Laufer, B. (1997). Memorizing new words: Does teaching have anything to do with it? *RELC Journal, 28*(1), 89-108. <https://doi.org/10.1177/003368829702800106>
- [14] Lyons, D (2017). How Many People Speak English, And Where Is It Spoken? Babbel Magazine.
- [15] Partridge, S. (1992). Nursery Rhymes, a Pathway to Reading? <https://files.eric.ed.gov/fulltext/ED353539.pdf>
- [16] Richards, J. C., & Rodgers, T. S. (2001). *Approaches and methods in language teaching*. Cambridge University Press.

- [17] Schmitt, N. (1997). Vocabulary learning strategies. In N. Schmitt, & M. McCarthy (Eds.), *Vocabulary: Description, acquisition and pedagogy* (Vol. 2035, pp. 199-227). Cambridge, England: Cambridge University Press.
- [18] Schmitt, N., Cobb, T., Horst, M., & Schmitt, D. (2012). How much vocabulary is needed to use English? Replication of van Zeeland & Schmitt (2012), nation (2006) and Cobb (2007). *Language Teaching*, 50(2), 212-226. <https://doi.org/10.1017/s0261444815000075>
- [19] Sokmen, A. J. (1997). Current trends in teaching second language vocabulary. *Vocabulary; description, acquisition and pedagogy*, 152-160.
- [20] Van den Broek, P., & Helder, A. (2017). Cognitive processes in discourse comprehension: Passive processes, reader-initiated processes, and evolving mental representations. *Discourse Processes*, 54(5-6), 360-372. <https://doi.org/10.1080/0163853x.2017.1306677>
- [21] Vygotsky, L. S. (1962). *Thought and Language*. Cambridge, MA: MIT Press.
- [22] *What happens in the brain while reading?* (2021, November 29). Iris Reading. <https://irisreading.com/what-happens-in-the-brain-while-reading/>