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Exploring the Impact of AI dictionaries on First Year EFL Students' Vocabulary Acquisition: Teachers' and Students' Perceptions at Mohamed Khider University of Biskra, Algeria

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Declaration

I, Noura Djimaoui , hereby declare under oath that all information in this master's dissertation entitled "**Exploring the Impact of AI dictionaries on First Year EFL Students' Vocabulary Acquisition: Teachers' and Students' Perceptions at Mohamed Khider University of Biskra, Algeria"** has been obtained and presented following academic rules and ethical conduct. This master's dissertationis the product of our own independent work. I also declare that, as required by these rules and conduct, I have fully cited and referenced all material and results that are not original to this work. This dissertation has not been submitted to another committee or published before.

Date: June 10, 2025

Signature:

Dedication

Words can never express my deep love and gratitude to my parents:

*My dear father '**Belkacem'** and my deep love goes to my dear mother '**Hania'** whom I owe*

agreat debt.

*To my only sister '**Meryem'** who supports me and surrounds me with her care to whom I wish*

*a successful life.To my dear brothers: **Ibrahim, Abd el nacer , youcef,Azzeddine and Mazen**,*

who believe in me and have encouraged me to finish my work.

*To the cherished memory of my beloved brother **sherif**, whose unwavering encouragement*

and heartfelt support continue to inspire me.

Though you are no longer with us, your faith in my abilities and your words of motivation

gave me the strength to pursue and complete my studies.

*To my best friends **Hana,Naima** and **Imane** for their love and motivation .*

To every person who appreciates the value of knowledge.

Acknowledgments

Abstract

Vocabulary is recognised as a complex cognitive process and an essential element for second and foreign language learning and acquisition. One well-established claim to support vocabulary acquisition among second and foreign language students is by applying technology-enhanced approaches to lexicology to optimise students' knowledge of words. The primary purpose of this study is to explore the impact of AI dictionaries on vocabulary acquisition. The population of interest encompasses first-year EFL students and EFL teachers at the Department of English, University of Mohamed Khider, Biskra. This study follows an exploratory design with a mixed methodology. This requires utilising two instruments which are a questionnaire for students and an interview for teachers. Accordingly, two different methods of analysis are used: quantitative analysis using the SPSS software (V.26) and qualitative analysis using thematic analysis. The findings show a positive link between using AI dictionaries and increased vocabulary, with EFL students and teachers showing general positive perceptions .The results further recommend integrating AI-assisted tools into EFL classrooms to enhance vocabulary learning and teaching.

Keywords: AI dictionaries, Students and teachers perceptions, Vocabulary acquisition

List of Acronyms

AI: Artificial Intelligence

EFL: English as a Foreign Language

ELT: English Language Teaching

ESL: English as a Second Language

L1: First Language

L2: Second/ Foreign Language

SLA: Second Language Acquisition

SPSS: Statistical Package for Social Science

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GENERAL INTRODUCTION

General Introduction

1. Background of the Study

In the last two decades,, vocabulary acquisition has become a key focus in English Language Teaching (ELT) research, particularly with the growing influence of technology. Advances in lexicography, supported by large language corpora and digital tools, have made vocabulary learning more accessible and effective. While vocabulary, lexicography, and lexicon are closely related, each represents a distinct concept in language learning. Researchers such as Carter (2001) and Decarrico (2001) highlight two main approaches to vocabulary learning: implicit, through natural exposure, and explicit, through conscious strategies. Recent studies also emphasise the value of practical tools like bilingual dictionaries, which now benefit from AI integration. This dissertation explores the role of AI-powered dictionaries in enhancing vocabulary acquisition for EFL studentsThe effectiveness of language dictionaries in enhancing vocabulary acquisition is the focus of this study, which draws attention to the role of AI dictionaries in improving EFL students' vocabulary acquisition.

2. Statement of the Problem

It is probably very intricate to master the four language skills: listening, speaking, reading, and writing, without acquiring a load of vocabulary knowledge, as vocabulary is considered the cornerstone of second language acquisition, and without it, nothing can be conveyed or communicated. However, EFL students will likely have difficulty acquiring vocabulary, affected by diverse factors such as pronunciation, spelling, word length, and meaning. That is why researchers suggest using developed lexical tools such as AI dictionaries to allow students to acquire more vocabulary, enriching their verbal repertoire.

3. Research Aims

Building on the understanding that lexical tools are essential for EFL students' vocabulary acquisition, this research investigates the impact of AI dictionaries on EFL students' vocabulary acquisition. To achieve this aim, three objectives are created:

1) Finding out whether lexical tools such as language dictionaries are beneficial or detrimental to the development of EFL students' vocabulary acquisition.

2) Exploring EFL students' and teachers' perceptionstowards the impact of AI dictionaries on vocabulary acquisition.

3) Examining the impact of AI dictionaries on students' vocabulary acquisition, used in modern student dictionaries and the different strategies to approach teaching via dictionaries.

4. Research Questions

This study attempts to answer the following questions:

1) What is the impact of AI dictionaries on first-year EFL students' vocabulary acquisition?

2) To what extent can AI dictionaries enhance EFL students' vocabulary acquisition? How?

3) What are first-year EFL students' and EFL teachers' perceptionstowards the impact of AI dictionaries on vocabulary acquisition?

5. Research Significance

This study will explore the different facets of technology implementation in EFL teaching and learning, incorporating theoretical and empirical perspectives. It holds significant importance for three main reasons:

- It will investigate whether AI dictionaries can enhance EFL students' vocabulary acquisition.

- It will synthesise the gaps in the current literature, allowing future researchers to gain more knowledge and better understand how lexicology is related to vocabulary acquisition through technological devices.

- The study's findings will serve as a solid empirical foundation for understanding the role of technology in second language acquisition, shedding light on the strengths and weaknesses of technology-based learning approaches to vocabulary acquisition. The results may inspire future researchers to carry out studies.

6. Research Methodology

Based on the aim of this study, this research requires the use of specific approaches to methodology. It will employ a mixed-methods approach by combining qualitative and quantitative methods for exploratory research. According to Creswell (2023), "mixed-methods is an approach to inquiry involving collecting both quantitative and qualitative data using a specific procedure or design and drawing conclusions about the insight to emerge from the combined databases. It brings philosophical assumptions and theories that inform the conduct of the research." (290). In essence, several instruments will be chosen to collect data, including a student questionnaire and a teacher interview. This study's population will encompass first-year students and EFL teachers at the University of Mohamed Khider, Department of English. The sample will encompass 60 students and five teachers enrolled at

the Department of English, selected randomly using the random sampling technique. Through the questionnaire and the interview, students' and teachers' perceptions towards the effectiveness of AI dictionaries on vocabulary acquisition will be explored. First-year students are selected as a sample for this study because they have gained instruction in English for 7 years and are likely to have an intermediate vocabulary level. As a method of data analysis, this study will use two different types of analysis: quantitative analysis and qualitative analysis. The questionnaire will be analysed quantitatively through the SPSS software, while the interview will be examined through thematic analysis.

7. Research Structure

This dissertation consists of two main chapters:

Chapter One serves as the theoretical framework of the study. It explores the role of AI dictionaries in enhancing vocabulary acquisition. It summarises, compares, and criticises critical concepts, theories, and previous regarding the use of AI-assisted tools in vocabulary acquisition and instruction.

Chapter Two presents the research methodology, data analysis and discussion. It describes the researcher's steps in performing the research, including the research method, procedures, setting, sample, data collection tools, and analysis methods. It also presents the results of analysis, interpretation, and discussion.

8. Ethical Considerations

When conducting research, an essential element that should be considered is ethical considerations. According to Dawson (2019), maintaining ethics in research is fundamental for obtaining authentic and feasible results, as it encourages participants to participate in research and provide information for the benefit of the study. Ethically, the participants

receive a comprehensive explanation of the research procedures, and their consent is acquired before distributing the questionnaire and the interview. To ensure privacy, participants are informed that the data are used for academic purposes, and all analysis and interpretation are done confidentially.

Chapter One

Enhancing Vocabulary Acquisition

Through AI-Powered Dictionaries

Chapter One:

Enhancing Vocabulary Acquisition Through AI-Powered Dictionaries

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Enhancing Vocabulary Acquisition Through AI-Powered Dictionaries

Introduction

Vocabulary is the basis and centrepiece of oral communication in second and foreign language learning. It is crucial in language development, reading comprehension, learning performance, and communication competencies. This chapter presents a theoretical overview of the role of vocabulary acquisition in second and foreign language learning, highlighting key definitions, introducing new concepts, and reviewing existing literature. The two main sections address vocabulary acquisition in foreign and second language learning and the contribution of technology and AI-powered dictionaries to this area.

1.1 Vocabulary Acquisition in Second and Foreign Language

The goal of learning a foreign or a second language is structured around knowing all aspects of the language. It is interesting to have some idea of how many words there are in the language. Research in vocabulary acquisition has generally been richly done, and the results of the studies that stretch back to the late nineteenth century are often widely correct. This section offers a comprehensive overview of the different facets of second and foreign language vocabulary acquisition.

1.1.1 A Glimpse of Vocabulary

Vocabulary refers to "a set of lexemes that involves single words, compound words, and idioms" (Richards& Schmidt, 2010, p.629). Vocabulary, or word knowledge, means "the ability of producing or understanding speech and writing" (Richards& Schmidt, 2010, p.462). Vocabulary plays an essential role in building the communicative competencies of students of

English as a foreign language. Schmitt (2000) emphasizes that "lexical knowledge is central to communicative competence and the acquisition of a second language" (p.55). According to Nation (2001), there is a complementary relationship between word knowledge and language use, as vocabulary enhances language use, increasing with this vocabulary knowledge (Nation, 2001). In English as a Foreign Language (EFL), vocabulary acquisition is integral to all four language skills: listening, speaking, reading, and writing. Edgar (1999) argues that vocabulary typically correlates with other language skills. Students with larger vocabulary knowledge show better listening, reading, speaking, and writing abilities, helping to develop language skills.Renandya and Richards (2002) emphasises that vocabulary is a central component of language proficiency and is the basis for how well students speak, listen, read, and write, arguing that a strong vocabulary acquisition strategies are key to maximising language learning potential through using diverse learning strategies, such as listening to radio or native speakers talks, using the language in varied contexts, or reading books. Hornby (1995) recognises vocabulary in four senses:

- Vocabulary is the total number of words that make up a language.

- Vocabulary is all the words known to a person or used in a particular book, subject, etc.

- Vocabulary is a list of words with their meaning.

- Vocabulary is the total number of words needed to communicate ideas and express meanings.

1.1.2 Aspects of Vocabulary

Central to research into vocabulary learning are key questions concerning how words are learned. Much work has therefore been involved in investigating the aspects of words. Nation (2001) emphasises "words are not isolated units of the language, but fit into many interlocking systems and levels. Because of this, there are many things to know about any particular word and many degrees of knowing" (p.37). At the most general level, Nation (2001) highlights three different aspects of vocabulary: form, use, and meaning. Table (1.1) presents the distinction made by aspects of words:

Table (1.1)

Aspects of Knowing a Word (Nation, 2001, p.50).

Form	Spoken	*R*	What does the word sound like?
		P	How is the word pronounced?
	Written	*R*	What does the word look like?
			How is the word written and spelled?
		P	
Meaning	Form and meaning	*R*	What meaning does this word form signal?
			What word form can be used to express

			this meaning?
		P	
Use	Grammatical functions	*R*	In what patterns does the word occur?
		P	In what patterns must we use this word?

R= Receptive knowledge; P= Productive knowledge

According to Table (1.1), a word's *form* involves its pronunciation (spoken form), spelling (written form), and any word parts that make up these particular items, such as prefix, root, and suffix. While, the *meaning* of a word oftenencompasses the way that *form* and *meaning* work together. In other words, the associations that come to mind when people think about a specific word or expression. Besides, *Use* involvesthe grammatical functions of the word, collocations that go with it, and any constraints on its use in terms of frequency and level (Nation, 2001). Thus, it should be known that the aspects of word knowledge and use include combining receptive skills (listening and reading), which means that receptive knowledge is much easier than productive knowledge because the form of items influences difficulty more than meaning, as shared knowledge of meaning between languages is more common than shared form. This knowledge is crucial for productive use, making productive learning more challenging than receptive learning (Nation, 2001).

1.1.3 Types of Vocabulary

Early research on foreign vocabulary learning has investigated the different vocabulary or word knowledge types. Kamil and Hiebert (2005) indicate that vocabulary is not a developmental skill or can ever be seen as fully mastered. It is rather a skill to be extended

across a lifetime. In their view, vocabulary has two forms: receptive and productive vocabulary. Below is the description of each type:

1.1.3.1   Receptive Vocabulary

Receptive or passive vocabulary often refers to "the number of words students can understand or recognise but do not use. They estimate them to be up to 100,000 words" (Richards& Schmidt, 2010, p.462). In Kamil and Hiebert's view (2005), receptive vocabulary is often less known to students and less frequently used (e.g., low-frequency words) as it can be assigned to listening and reading contexts.

1.1.3.2 Productive Vocabulary

Productive or active vocabulary typically means "the number of words students can use, about 3000 to 5000 words. This number is regarded as the intermediate to upper intermediate level of proficiency" (Richards& Schmidt, 2010, p.462). According to Kamil and Hiebert (2005), active vocabulary can be used by students when writing or speaking. In other terms, words that are commonly known, familiar, and frequently used (e.g., high-frequency words).

To enhance the understanding of receptive and productive vocabulary, Nation (2001) asserts that the terms receptive and productive apply to various kinds of language knowledge and use. Receptive vocabulary may be less complicated than productive vocabulary. However, several distinctions outline the complementary relationship between them. In this regard, Ellis and Beaton (1993) highlight four levels of difficulty. They are reviewed by Nation (2001) as follows:

A. The amount of knowledge explanation: Ellis and Beaton (1993) explain that productive learning is more complex due to the need for extra learning of new output patterns, especially in languages with different writing systems and sounds. For example, children can receive the

meaning of the word *spaghetti*, but write it as *stigli* or *parsghetti*. This indicates that word form is more difficult than its meaning, as shared knowledge of meaning between languages is more common than shared form (Nation, 2001).

B.The practice explanation: Ellis and Beaton (1993) advocate that receptive vocabulary use often gains more practice than productive use in ordinary language learning conditions, potentially affecting vocabulary size. Still, both receptive and productive vocabulary depend on specific practice, opposing the idea that productive knowledge includes all receptive knowledge (Nation, 2001).

C. The access explanation: According toEllis and Beaton (1993), "a new foreign language word in the early stages of learning has only a straightforward link to its L1 translation. Because the L1 word faces various competing associations, productive recall is more challenging than receptive recall. For example, the L1 translation of the foreign word *Kaki is leg* (Nation, 2001).

D.The motivation explanation: Ellis and Beaton (1993) suggest that most L2 students may not be motivated to use specific knowledge productively due to their socio-cultural background, as their productive knowledge may remain unknown or stored incorrectly. This distinction is not a knowledge continuum, but a gap between motivated and unmotivated vocabulary (Nation, 2001).

Although receptive and productive knowledge can be seen as being on a continuum, theorists see a difference between them. In essence, Meara (1990) explains that they are different in terms of associations, which means that, in other words, they activate productive vocabulary, while external stimuli activate receptive vocabulary. Yet, Corson's (1995) view of active and passive vocabulary is typically based on use rather than degree. To sum up, passive

vocabulary includes four kinds of vocabulary: active vocabulary, words that are partly known, low-frequency words, and unnecessary words in active use. From this viewpoint, the terms active and passive are stronger than productive and passive, sometimes referring to passive vocabulary as unmotivated vocabulary (Corson, 1995).

1.1.4 Theories of Vocabulary Acquisition

Vocabulary acquisition is a fundamental part of foreign language learning. Various theories have been proposed to explain how vocabulary is learned. However, some second language acquisition theorists view acquisition and learning as distinct processes. According to Richards and Schmidt (2010):

> Language acquisition is the learning and development of a person's language. The learning of a native first language is called first language acquisition, and of a second or foreign language, second language acquisition. Some theorists use "learning" and "acquisition" synonymously. Others maintain a contrast between the two terms, using "learning" to mean a conscious process involving the study of explicit rules of language and monitoring one's performance, as is often typical of classroom learning in a foreign language context, and using "acquisition" to refer to a nonconscious process of rule internalization resulting from exposure to comprehensible input when the student's attention is on meaning rather than form, as is more common in a second language context. Still others use "acquisition" only regarding learning one's first language. (p.312)

This definition encompasses diverse perspectives on language learning, such as cognitive perspectives. According to Carter's (2001) highlights, vocabulary acquisition research is central to:

- Answering key questions concerning *how* words are learned.
- Enhancing explicit vocabulary teaching.

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- Employing implicit vocabulary learning.

- Tackling issues of memorization, L2 word storage, integrating sound levels, grammatical structure, and semantic patterns.

- Understanding a word involves knowing its spoken and written contexts, patterns with related words, and syntactic, pragmatic, and discoursal patterns.

- Knowing the active and passive processes of words.

Studies about vocabulary acquisition have gained momentum in recent years, promoting a deeper understanding of the process behind vocabulary development. Such as: *What* does it mean to know a word? *How* will L2 students acquire new words? Are the basis of second language vocabulary acquisition research, outlining the current emphasis on students' needs in developing their vocabulary skills and teachers' role in guiding them towards this objective (Decarrico, 2001). L2 theorists lay out key elements that underlie the debate on the extent to which second language acquisition involves implicit learning, explicit learning, or both. In this regard, Ellis (1995) explains the role of both theories, summarized as follows:

1.1.4.1 Implicit Learning Theory

Implicit learning theory refers to "a non-conscious learning, contrasted with explicit learning, which is more conscious. It is learning without awareness of what has been learned" (Richards& Schmidt, 2010, p.274). Ellis (1995) emphasizes that words are acquired unconsciously through solid implicit learning. However, through weak implicit learning, words can only be learned with at least some awareness that they are new words.

1.1.4.2 Explicit Learning Theory

Explicit learning theory is "a conscious process of learning language items (e.g., vocabulary) by using strategies, such as memorization techniques. It is accompanied by the

awareness that one is learning. It involves such conscious operations as hypodissertationformation and testing" (Richards& Schmidt, 2010, p.210).

Carter (2001) highlights that L2 vocabulary acquisition research frequently compares explicit and implicit learning efficacy, identifies optimal implicit learning strategies, and considers applications to classroom vocabulary instruction. In the late 1990s, researchers started to recognise the importance of implicit vocabulary learning and explore the enhancement of explicit learning. Ellis (1995) identifies four main points on an explicit-implicit vocabulary-learning continuum, presented in the following table:

Table (1.2)

Strong and Weak Implicit-Explicit Learning Hypotheses (Ellis, 1995, cited in Carter, 2001, p.44)

	Hypodissertation1 (strong)	Hypodissertation2 (weak)
Implicit learning	It holds that words are mainly acquired by unconscious means.	It holds that words cannot be learned without at least some noticing or consciousness.
Explicit learning	It holds that a range of metacognitive strategies, such as planning and monitoring, are necessary for vocabulary learning.	It holds that a range of strategies are used to infer the meaning of a word, usually with reference to its context.

To sum up, these four hypotheses have been strongly studied and advanced by L2 researchers, including Krashen (1989), Schmidt (2000), and Brown (2007). They conclude that "the more processes involved in learning a word, the superior the retention and recall has been influential" (Carter, 2001, p. 45). The distinction between implicit learning hypodissertationand explicit learning hypodissertationmay be best capitalised by saying that implicit learning occurs without intention or awareness to learn. Explicit learning occurs with conscious intention and awareness (Brown, 2007, p.292).

1.1.5 Difficulties of Vocabulary Learning

A topic of ongoing discussion for perhaps half a century now, questions about the difficulties of second and foreign language vocabulary learning. Brown (2007) states that understanding how L2 students feel, respond, or value learning is important to second language acquisition. Yet, considerations have been turned to discuss what is most important in learning a second or a foreign language: what factors hinder the second/foreign language acquisition process? Brown (2007) points out four major difficulties. They are closely defined and explained as follows:

1.1.5.1 Self-Esteem

Self-esteem often refers to "a person's judgment of their own worth or value based on a feeling of efficacy. It is an affective variable in language learning and low self-esteem may negatively influence second language acquisition" (Richards& Schmidt, 2010, p.517). According to Brown (2007), self-esteem is crucial for successful cognitive and affective activities, derived from experiences and external assessments. Efficacy, a sense of interacting effectively with one's environment (Richards& Schmidt, 2010), often helps students understand their abilities and reflect upon the factors that cause failure. However, high self-

efficacy allows students to attribute failure to a lack of ability, while low self-efficacy may attribute failure to external factors or an unhealthy psychological perception (Brown, 2007).

1.1.5.2 Inhibition

Another factor that has been discussed as a major affective factor that can negatively impact second language learning is inhibition, "a sub-system of attention that deliberately ignores certain types of stimuli" (Richards& Schmidt, 2010, p. 38). More elaborately, Brown (2007) finds that inhibition stems from a fear of making mistakes or being judged. He further explains that students with strong inhibition may avoid speaking, interacting, or participating as language learning may inherently require a degree of vulnerability, which can trigger feelings of anxiety or low self-consciousness. Nevertheless, students with low inhibition are likely more willing to learn (Brown, 2007).

1.1.5.3 Anxiety

Research on second language anxiety is intricately intertwined with self-esteem and inhibition, playing a significant role in second language acquisition. According to Richards and Schmidt (2010), "anxiety is a subjective feeling of apprehension and fear associated with language learning and use" (p.313). Recent research on foreign language anxiety emphasizes its situational aspects, exploring the complex relationship between anxiety and performance, the impact of teaching methods, and the connection between general anxiety and more specific types of anxiety associated with speaking, reading, or examinations (Richards& Schmidt, 2010). In this regard, three components of foreign language anxiety have been identified. Brown (2007:162) reviews them as follows:

- Communication apprehension arises from students' disability to adequately express mature thoughts and ideas.

- Fear of negative social evaluation arises from a student's need to make a positive impression on others.

- Test anxiety or apprehension over academic evaluation.

1.1.5.4 Motivation

Motivation is another affective variable factor to consider, gaining attention from L2 researchers. Richards and Schmidt (2010) say that motivation is the driving force that leads to action. In language learning, motivation is seen as a combination of the student's perceptions, desires, and willingness to expend effort in order to learn a second language" (p.377). In this sense, Brown (2007) explains that motivation is a complex interplay of internal and external factors, encompassing two major types:

A. Intrinsic motivation: The enjoyment of language itself (Richards& Schmidt, 2010). This type of motivation comes from within the student. For example, a student may learn English because he/she enjoys reading classic novels, probably driven by interest or enjoyment of the learning process (Brown, 2007).

B. Extrinsic motivation: The force by which learning is affected by factors such as societal expectations, academic requirements, and other sources of rewards and punishments (Richards& Schmidt, 2010). This kind of motivation often comes from external factors (rewards/ punishments). For instance, a student may learn English for specific purposes and under specific pressure, perhaps to get a job or pass a test (Brown, 2007).

Of course, the assumptions for countless studies on the effect of motivation on learning are not erroneous in the field of second language acquisition. Still, other motivation theories are central to issues of goal setting, attributions, self-determination, and student autonomy, with motivation being a key factor in second language learning success and failure.

1.1.6 A Taxonomy of Vocabulary Learning Strategies

Broadly speaking, vocabulary learning strategies are a part of language learning strategies, which in turn are part of general learning strategies. According to Oxford (1990), "language learning strategies are related to the features of control, goal-directedness, autonomy, and self-efficacy, allowing students to become more autonomous and in control of their own learning processes" (p.166). Similarly, Richards and Schmidt (2010) define the term *strategy* as "procedures used in learning, thinking, etc., which serve as a way of reaching a goal. In language learning, learning strategies" (p.559). Researchers emphasize the need to use strategies that consist of a series of features needed in vocabulary learning. Nation (2001:273) categorises them as follows:

- A strategy should involve word choice.
- A strategy should be complex.
- A strategy should require knowledge and benefit from training.
- A strategy should increase the efficiency of vocabulary learning and use.

The development of taxonomies of vocabulary learning strategies has gained momentum recently, focusing on the need for L2 students to both understand and have the skill to apply

these strategies. Nation (2001) mentions that Schmitt's (2000) extensive taxonomy is organised around Oxford's (1990) cognitive, metacognitive, memory, and social categorisation. Gu and Johnson (1996) developed a taxonomy around metacognitive regulation, guessing strategies, dictionary strategies, note-taking strategies, memory strategies (rehearsal), memory strategies (encoding), and activation strategies. Additionally, Williams (1995) identifies five potential strategies for vocabulary learning. These include inferring meaning from context, identifying lexical familiarisation, and word analysis. Relevant to this research, this section covers some of the vocabulary learning strategy taxonomies reviewed by Nation (2001), which are summarized as follows:

1.1.6.1 Guessing Meaning from the Context

Guessing meaning from the context is probably the most important of all vocabulary learning strategies. According to Nation (2001), guessing meaning from the context is often linked to reading or listening (receptive vocabulary), emphasising the text's message. This includes extensive reading, conversations, and listening to stories, films, television, or radio. It does not involve deliberately guessing words and their definitions or translations because context sentences and phrases aid language-focused vocabulary learning. Guessing meaning from the context occurs under favourable conditions:

- Firstly, vocabulary size significantly influences guessing success, with the optimal ratio of unknown to known words often achieved through simplified or adapted texts.

- Secondly, estimating guessing from context requires considering actual words not known by each student, rather than teacher intuition or unsystematic word choices.

- Thirdly, student skills are crucial for guessing, with studies showing varying abilities from context.

- Fourthly, students should be given credit for guesses that contribute to their knowledge of words, even if they are not 100% correct (Nation, 2001).

Similarly, Williams (1995) explains that guessing the meaning from context is a technique applicable in two contexts: the context within the text, which encompasses the morphological, semantic, and syntactic information in a particular text. These contexts apply words found in the sentence containing the unknown word or other sentences beyond the sentence of the unknown word. Teachers can engage and captivate their students by incorporating these techniques into vocabulary instruction (Williams, 1995).

1.1.6.2 Dictionary Strategy

The dictionary strategy is thought to be a crucial vocabulary learning strategy that encourages self-directed and autonomous learning. Nation (2001) highlights the urge to use dictionaries to support vocabulary development effectively. As several researchers have noticed the complex nature of dictionary use, they have come to highlight the skills needed for the receptive or productive use of dictionaries. Scholfield (1982) explains that the receptive use of a dictionary involves understanding a word's meaning while reading or listening, outlining necessary skills, suggesting tests, and providing training suggestions. However, productive use involves using a dictionary to encode meaning by turning ideas into language, often using bilingual or monolingual dictionaries for efficient communication. Combining both types can yield the best result (Nation, 2001).

1.1.6.3 The Word Card Strategy

Learning from word cards is a strategy that helps increase vocabulary size. It involves choosing suitable words, making word cards, and using first language translations. The word or phrase should be written on one side and its meaning on the other to encourage recall.

Using pictures and translations as complementary sources of meaning is also suggested, as different students prefer different sources of meaning. For example, while 25 out of 82 students learned faster with words than with pictures, a significantly large group learned better from words. A teacher would achieve better results for all students by providing both words and pictures, rather than the form preferred by the majority (Nation, 2001).

1.1.6.4 The Peg strategy

According to Thomspon (2003), the peg strategy allows unrelated items, such as words on a word list, to be recalled by linking them with a set of memorized "pegs" or "hooks. The peg or the hook is the word that the student acquires. It has the least possibility of being forgotten because of its high frequency in everyday texts and its sound foundation in the student's memory (Thompson, 2003).

Briefly, foreign language teachers need to teach vocabulary and use a variety of engaging strategies to simplify the learning process for students.

1.1.7 Importance of Vocabulary in L2 Instruction

In recent years, there has been a significant increase in research on vocabulary learning, highlighting the importance of vocabulary in foreign language learning and acquisition. Nation (2001) acknowledges that "without grammar very little can be conveyed, without vocabulary nothing can be conveyed" (p.129). Arguably, Carter (2001) emphasizes the importance of teaching vocabulary, stating that:

> Vocabulary and its related research paradigms have many inflexions about English language teaching. These include classroom-based studies exploring different methodologies for vocabulary teaching, a long history of lexicographic research concerning English dictionaries

for language students, and new computer-driven descriptions of vocabulary which re-evaluate the place of words as individual units about grammar and the larger patterns of text organization" (p.42).

Accordingly, Nation (2001) emphasizes that a strong vocabulary basis is essential for second and foreign language acquisition and the development of the four skills. He summarises the importance of vocabulary in four key points:

- Vocabulary is fundamental to communication because it is the most important component of language proficiency.

- Vocabulary often supports reading comprehension, suggesting that students need to know at least 98% of the running words in a text for fluent reading.

- Vocabulary size typically enhances language proficiency, with about 2000-word families supporting communication and about 8,000 word families for reading.

- Vocabulary affects listening and speaking, requiring rapid word recognition.

- A strong vocabulary is key to good writing; a weak one will diminish it.

Additionally, AlQahtani's (2005) study emphasized the importance of vocabulary. Firstly, vocabulary is one of the most critical aspects of learning a second language; foreign language curricula should reflect this. Secondly, vocabulary competence is essential for understanding the language and communicating ideas. By doing so, the student can master all four language skills. Thirdly, each individual's vocabulary knowledge is customized to their motivation, objectives, and need for the terms. Fourthly, vocabulary mastery is an individual's exceptional ability to process words in a language acquired based on their interests, requirements, and motivation. Finally, vocabulary is an essential part of the communicative competency of language (AlQahtani, 2015).

2.1 The Role of AI-Dictionaries in Foreign Language Learning

Much of the early research on technology use in foreign and second language learning in the 1980s and 1990s was concerned with keeping abreast of technological change. At the start of the twenty-first century, *multimedia* has become virtually synonymous with computers, witnessing a massive evolution from an early emphasis on how to use the new technology to research on technology's effects on foreign language learning. In this section of the literature review, technology-related learning through Artificial Intelligence-powered dictionaries for language learning was given a huge theoretical framework, and its role in enhancing the acquisition of second and foreign languages is discussed, highlighting key definitions, characteristics, forms, functions, and use.

2.1.1 AI- Dictionaries

AI dictionaries are digital lexical tools that use an AI algorithm to support personalised learning. They depend on a large corpus of algorithms to offer contextual definitions, audio pronunciations, semantic analysis, and grammar feedback. AI-powered dictionaries like Oxford Student's Dictionary, Cambridge Dictionary Online, and Wordtune often provide sophisticated language data extracted from real-world usage (Li& Hafner, 2002). According to Zhao (2020), "AI dictionaries adapt to the student's needs by providing meaning, pronunciation, collocations, synonyms, and contextual usage in a single interface" (p.81). This could imply various features of AI dictionaries that support second and foreign language learning. According to Nation and Webb (2011), AI dictionaries offer contextual definitions, real-life usage examples, pronunciation support, grammar and usage notes, and bilingual support and translation. They help students analyse complete sentences, listen to authentic speech-in-text audios, and detect errors in input and offer grammar corrections or usage tips. In terms of vocabulary acquisition, AI dictionaries are considered effective tools in supporting

multimodal input and facilitating the integration of listening, reading, and vocabulary through using visual, auditory, and tactile techniques (Kukulska-Hulme, 2020).

In short, AI tools can take multiple forms according to the students' needs, interests, and preferences. This suggests their applicability in developing EFL students' receptive and productive skills, exploring complex grammatical constructs, upgrading vocabulary selections, and fostering control and autonomy (Faiz et al., 2023).

2.1.1.1 Types of AI Dictionaries

As artificial intelligence continues to evolve, AI-powered dictionaries have emerged as innovative tools for language processing, learning, and communication. This analysis examines three key types of AI dictionaries reverse dictionaries, embedding-enriched dictionaries, and generative multilingual AI dictionaries.

2.1.1.1.1 A reverse dictionary

A reverse dictionary enables users to input a phrase or description and receive a list of words with closely related meanings. It is particularly useful in situations where an individual cannot recall the exact word they are searching for. According to Sushrut Thorat (Sushrut, p. n. d), this tool functions by assessing semantic proximity, utilising a graph-based model to determine the similarity between words. While the explanation effectively outlines the purpose and function of a reverse dictionary, the use of technical terms such as "distance-based similarity" and "computed on a graph" may be challenging for readers without a background in computational linguistics. Simplifying or briefly clarifying these terms would enhance accessibility. Additionally, the inclusion of a practical example would aid in illustrating how a reverse dictionary operates in real-world contexts. Although the paragraph is logically structured, its tone is somewhat formal and may benefit from a more engaging and

fluid style. Finally, it is worth noting that reverse dictionaries are not infallible and may occasionally fail to retrieve the exact word a user intends.

2.1.1.1.2   Embedding Enriched Dictionaries

Embedding-Enriched Dictionaries represent a dictionary-based approach widely employed in social science research due to its clarity, ease of implementation, and computational efficiency. This method utilises a predefined dictionary—a collection of words systematically organised into semantic categories. It functions by quantifying the frequency with which these words occur within a given text and subsequently classifying the text according to the associated categories (Hai, 2003, p. 3). While the dictionary-based method is frequently commended for its transparency, simplicity, and effectiveness, such commendations tend to overlook several critical limitations. The technique is heavily dependent on predetermined word lists, which may introduce researcher bias and often fail to account for the intricacies of language use, including sarcasm, idiomatic expressions, and contextual variation in meaning. Moreover, by concentrating primarily on word frequency, this approach disregards syntactic and semantic nuances, potentially resulting in inaccurate categorisation. The assertion of methodological transparency is also debatable, as the process of constructing dictionaries is not always standardised or easily replicable. Furthermore, this method often proves inadequate in accommodating linguistic evolution, including emerging slang and culturally specific references, thereby rendering it less flexible compared to contemporary machine learning-based models.

21.1.1.3   Generative and Multilingual AI-Dictionaries

Generative and Multilingual AI Dictionaries demonstrate strong performance across a range of language-related tasks, including comprehension, reasoning, and text generation. As noted by (Ahuja, 2003), a central issue currently facing the AI field concerns the extent of these models' capabilities and the boundaries of their effectiveness. However, accurately assessing the performance of such systems remains a complex and unresolved challenge.

2.2 Use of AI Dictionaries in Vocabulary Learning and Instruction: Previous Studies

In recent years, Artificial Intelligence (AI) has significantly impacted second and foreign language vocabulary teaching. AI-powered dictionaries are considered effective in providing contextualized, interactive, and adaptive support for all learning facets. Several empirical studies have explored how AI dictionaries enhance vocabulary acquisition.

Within a linguistic framework, Alahmadi and Foltz's (2020) study examines the impact of lexical inference and dictionary use on undergraduate EFL students' vocabulary learning, considering multiple influencing factors. This study employs a mixed-methods design using a pre-test and a post-test where participants read target words in English textbooks, and then the teacher asks them to guess their meaning or look it up in a dictionary. The results show a significant learning effect for both lexical inferencing and dictionary consultation, with a higher pre-test vocabulary size related to a larger learning effect for both strategies, indicating that successful vocabulary learning through dictionary use relies on students' vocabulary size. This study suggests investigating the skills and techniques necessary for practical word inference and dictionary use to build a strong vocabulary.

Conclusion

This chapter stands explores key definitions and introduces integral concepts and theories in the field of second and foreign language learning, using traditional and contemporary sources and research studies conducted by respected researchers. Much of the research in this chapter focuses on the role of vocabulary as the centrepiece of spoken and written communication and the methods and strategies adapted by teachers in the EFL setting. It brings to light the link between vocabulary acquisition and technology use, focusing on the role of digital tools and AI-powered dictionaries in developing vocabulary and enhancing word use and meaning. The chapter further explores some empirical studies investigating the relationship between the research. The next chapter presents the research methodology, study design, and data analysis.

CHAPTER TWO

STUDY DESIGN, DATA ANALYSIS

AND DISCUSSION

Chapter Two:

Study Design, Data Analysis and Discussion

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Chapter Two

Study Design, Data Analysis and Discussion

</div>

Introduction

Over the decades, there has been a great deal of discussion on what constitutes social research, how it should be conducted, and whether specific methods are better than others. Instead, undertaking a research project can be fascinating, rewarding, and exciting. This chapter provides an overview of the research methodology followed in this study, describing integral elements such as research approach, design, purpose, sample size, population, sampling, data collection tools, and methods of analysis. It also presents the data analysis and interpretation of the students' questionnaire and teachers' interview using two different types of analysis. This includes an SPSS analysis and a thematic analysis. This chapter is important because it draws results and reports the findings concisely and objectively.

2.1 Choice of Methodology

The research methodology is the general theory and the set of principles guiding all facets of the research. Although different methodologies have become popular at different social, political, historical, and cultural levels, all methodologies still have specific strengths and weaknesses that the researcher should adequately address and acknowledge. Below are the methodological procedures of this study, described and explained in detail.

2.1.1 Research Approach

Starting in the 1990s, researchers have rejected the concept of comparable approaches, as both the quantitative and qualitative approaches have strengths, saying that they should be thoroughly mixed in a single research study (Creswell, 2009), resulting in what researchers refer to as *mixed-methods* or *triangulation*. Johnson and Christensen (2014) explain that mixed research falls at the centre of the research continuum, with the qualitative design on the

left and the quantitative design on the right. Dawson (2019) says: "the terms *triangulation* or *mixed-methods* research are used when a combination of qualitative and quantitative forms of inquiry is used." (p.19). For practical reasons, this study employs the mixed-methods approach since combining qualitative and quantitative methods will probably help overcome problems of bias, reliability, and validity or merely produce a fuller picture of a phenomenon and whether or not it is legitimate to combine research methods (Creswell, 2009).

2.1.2 Research Design

In educational research, methodological debates and case studies have focused on the importance of three integral objectives: exploration, explanation, and description. Still, several other objectives, like influence and prediction, have also gained momentum among researchers. This study's overarching objective is to learn about the impact of AI dictionaries on vocabulary acquisition and whether this type of modern dictionaries would have a positive or negative impact. Hence, the purpose is exploratory. According to Johnson and Christensen (2014), exploration in research refers to the attempt to generate ideas about a given phenomenon and the aspects of the phenomenon, previously known information, new gaps and discoveries, and new ideas for further research.

2.1.3 Research Setting

Before conducting any research study, a crucial element should be carefully selected: the location or the research setting, commonly known as the research site. According to Given (2008):

> The research setting can be seen as the physical, social, and cultural site where the researcher conducts the study. In qualitative research, the focus is mainly on meaning-making, and the researcher studies the participants in their natural setting. The contrast with postpositivist, experimental, and quantitative research settings lies in the fact that here, the investigator does

not attempt to completely control the conditions of the study in a laboratory setting, instead focusing on situated activities that locate her or him in the context. (p.27)

This research selects the University of Mohamed Khider, Department of English, as the physical location where the research will be executed.

2.1.4 Population and Sampling

This study attempts to explore first-year EFL students' and teachers' of English perceptionstoward the impact of AI dictionaries on vocabulary acquisition. It is important, therefore, to define critical components such as the population, the sample size, and the sampling method. Below is the description of each element:

2.1.4.1 Population

The population of interest for this study encompasses First-year EFL students and teachers of English at the Department of English, University of Mohamed Khider, Biskra. Defined by Richards and Schmidt (2010), "*Population* refers to any set of items or individuals that share several observable characteristics and from which a sample can be taken" (p.452). The population is the foundation of research, encompassing the group from which the researcher aims to generalise data.

2.1.4.2 Sampling Method

It is of vital importance to say that large populations make it challenging to gather representative samples, which can impact research validity and potentially introduce bias (McCombes, 2023). That is why selecting a sampling method is crucial. This study choses random sampling technique, selecting 60 students and five teachers to take part in this study. This allows the researcher to make strong statistical inferences about the whole group involving random selections (McCombes, 2023).

2.1.5 Data Collection Tools

Data collection is an important step that allows the researcher to systematically gather information or reflect on the participants' opinions and perceptions of a particular research topic using specific tools. These tools are recognised as "the physical or non-physical means that produce quantitative or qualitative data to be analysed and interpreted" (Griffee, 2012). This study employs two research tools, described as follows:

2.1.5.1 Students᾽ Questionnaire

Theoretically, the questionnaire is a self-report data collection instrument used to collect large or small scaled data from participants (Johnson & Christensen, 2014). This study employs a questionnaire for EFL 60 students from first-year population to explore their perceptionsand perceptions of the use of AI-dictionaries in enhancing vocabulary acquisition, implying close-ended criteria that allow more detailed responses. It comprises 30 questions, divided into three sections. It encompasses three sections:

- **Section One: Background Information:**

  It includes 5 questions (Q1-Q5) about the participants' gender, age, level, choice, and most challenging skill.

- **Section Two: Students' Perceptions Towards Vocabulary Acquisition:**

  It involves 8 close-ended questions (Q6-Q13), following the Five-Point Likert Scale of *Agreement* (5 points: strongly disagree, disagree, neutral, agree, and strongly agree). It also includes 2 open-ended questions (Q14-Q16) to allow students to elaborate on their thoughts.

- **Section Three: Students' Perceptions of the Impact of AI Dictionaries on Vocabulary Acquisition:**

It encompasses a set of 10 questions (Q16-Q25); 8 questions follow the Likert Scale of Importance (5 points: Always, often, sometimes, rarely, never). The other 2 questions are employed to allow extra information (open-ended), exploring students' thoughts and beliefs about AI dictionaries and whether they positively or negatively impact vocabulary acquisition.

2.1.5.2 Teachers' Interview

Significantly, the interview refers to "a data collection method in which an interviewer asks an interviewee a set of questions. It can be conducted face-to-face, online, or on the phone" (Johnson &Christensen, 2014, p.317). Researchers widely acknowledge interviews as authentic and strong data collection tools that support research establishment. This interview is conducted with five EFL teachers at the Department of English, University of Mohamed Khider, Biskra to obtain in depth information, exploring their motivations on the topic. The interview systematically involves 15 questions, divided into three sections:

- **Section One: Personal Information**

  The first section comprises3 questions (Q1-Q3) about gender, degree, and years of experience.

- **Section Two: Engaging Questions**

  This section involves 6 open-ended questions (Q4-Q9) reflecting teachers' beliefs on vocabulary acquisition and exploring strategies, methods, challenges, and solutions.

- **Section Three: Exit Questions**

  This section includes 6 open-ended questions (Q10-Q15) that explore teachers' perceptionstoward using AI dictionaries to teach vocabulary and investigate their impact on acquisition.

2.2.6 Methods of Data Analysis

The choice of data analysis method typically depends on whether the research is quantitative or qualitative; this decision often reflects the researcher's preferences and methodologies. Creswell (2009) states, "the data analysis process involves making sense out of text and image data. It involves preparing the data for analysis, conducting different analyses, and moving deeper into understanding the data" (p.171). As this study follows a mixed-methods approach, two types of analysis are applied:

2.1.6.1 Quantitative Analysis

Quantitative data analysis entails producing data in a format that can be easily analysed. It is often used to analyse data taken from large-scale surveys, which minimises problems during the analysis through variations and frequencies (Dawson, 2019). This study uses quantitative analysis to analyse and interpret the questionnaire. In this regard, the Statistical Package for Social Sciences SPSS is applied to understand the meaning of the text, facilitate the interpretation, and serve as an effective means for time management and overcoming analysis blocks (Dawson, 2019). The analysis is presented in pie charts, which indicates frequency and percentages of the obtained data.

2.1.6.2 Qualitative Analysis

Qualitative data analysis is a generic method that collects, analyses, and reports 4-5 themes (Creswell, 2009). Qualitative analysis takes different formats to analyse a series of written answers on an open-ended questionnaire or notes taken from an interview. This study uses thematic analysis to analyse the teachers' interview.

2.2 Data Analysis and Interpretation

2.2.1 Student Questionnaire

The questionnaire is addressed to sixty (60) first-year students to cooperate in this study. It consists of three main sections; each section had ten close-ended questions. They are analysed through the SPSS software, and the results are presented as follows:

Section One: Demographic Information

Q1: What is your gender?

A. Male

B. Female

Figure (3.1)

Students' Gender Distribution
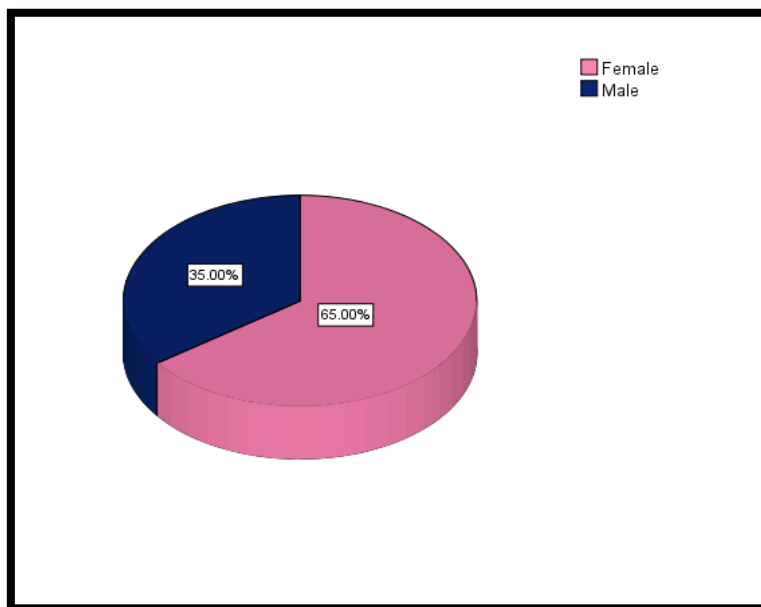
This question aims to determine the dominant gender among first-year students. As displayed in Figure (3.1), out of 60 (100%), 39 (65%) are females and 21 (35%) are males.

The results indicate the overrepresentation of females in first-year EFL classrooms at the University of Mohamed Khider, Biksra.

Q2: How old are you?

Figure (3.2)

Students' Age Selection
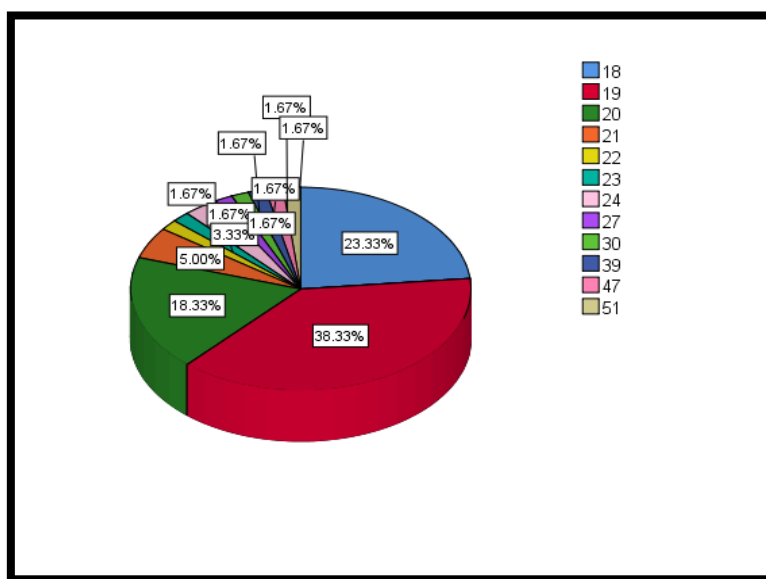
This question aims to determine the age gap between the participants. Figure (3.2) shows that the majority of students, representing 38.3% aged 19, 14 participants (23.3%) age 18, and 11 (%) age 20. The remaining participants have an age range between 21 and 51, representing a small portion of 20.1%. The results indicate that the research participants are relatively young, which reflects their motivation and willingness to study English.

Q3: What is your English Level of proficiency?

   A. Very good

   B. Good

C. Average

D. Bad

Figure (3.3)

Students' Level of English Proficiency Variations
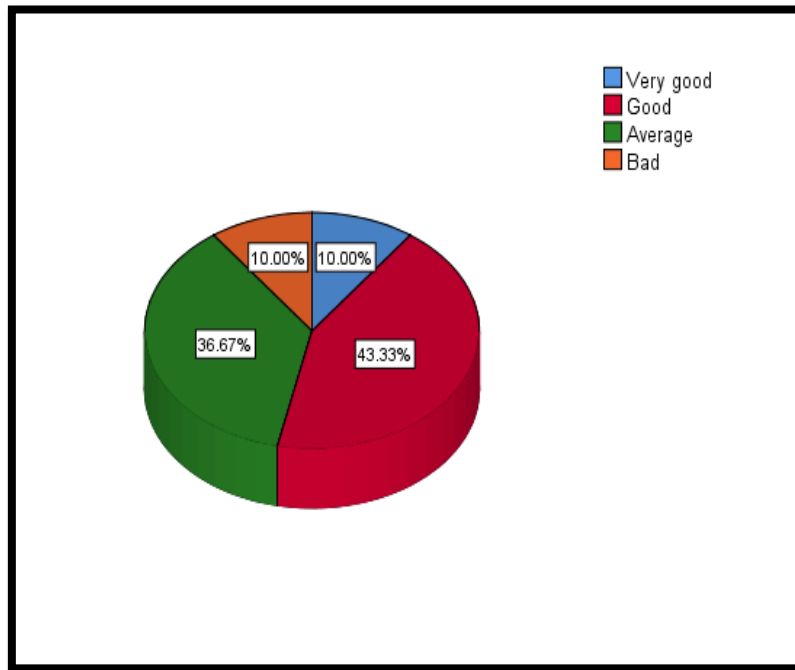
The primary focus of this question is structured around determining first-year students' English proficiency level. Figure (3.3) presents that a large portion of the participants (26), which represents 43.3%, have a good level. 22 (36.7%) have an average level. However, a small number, representing 6 participants (10%), have a very good level, with the remaining 10% being bad at English. Therefore, it can be said that first-year students' English proficiency level is good to a large extent, which indicates their capacity and determination for learning English as a foreign language.

Q4: I prefer learning vocabulary through:

A. Listening

B. Speaking

C. Reading

D. Writing

Figure (3.4)

Students' Preferred Vocabulary Learning Strategy
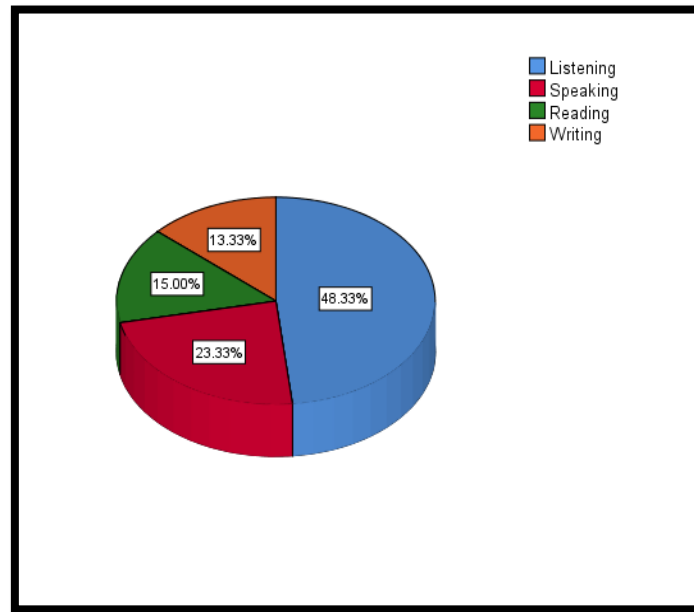
    This question seeks to identify students' most preferred vocabulary learning strategy, exploring whether they rely on listening, speaking, reading, and writing to learn vocabulary. Figure (3.4), out of 60 respondents (100%), 29 (48.3%) prefer *listening.* 14 (23.3%) choose *speaking.* 9 (15%) select *reading.* And 8 (13.3%) select *writing.* According to the results, listening is regarded as the most preferred vocabulary learning strategy, followed by speaking. This indicates the importance of receptive knowledge in building a foreign language repertoire.

Section Two: EFL Students' PerceptionsTowards Vocabulary Acquisition in Second/ Foreign Language

SA= Strongly agree; A= Agree; N= Neutral; D= Disagree; SD= Strongly disagree

Q1: Do you agree that vocabulary is the centrepiece of the language repertoire?

Figure (3.5)

Students' PerceptionsTowards the Place of Vocabulary in Foreign Language Learning
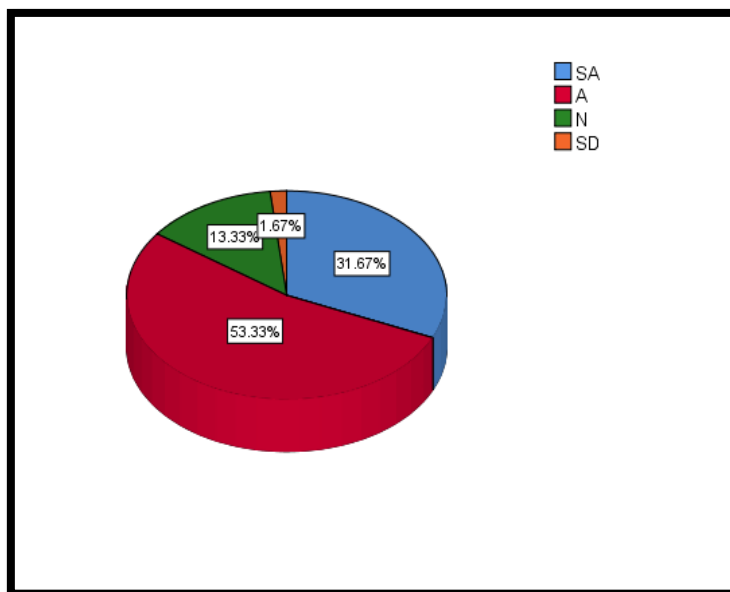
This question is designed to explore the importance of vocabulary in foreign language learning. In this light, the five-point Likert Scale of *agreement*is employed. According to Figure (3.5), 19 respondents, representing 31.7%, express a strong agreement. 32 (53.3%) expressa mild agreement. However, 8 (13.3%) express a neutral perception. And 1 respondent (1.7%) show a strong disagreement. From the obtained results, we deduce that vocabulary is highly regarded as the centrepiece of language communication, as acknowledged by the majority of students (85%).

Q2: Do you think vocabulary is needed for good communication skills in English?

Figure (3.6)

Students' PerceptionsTowards the Role of Vocabulary in English Language Communication
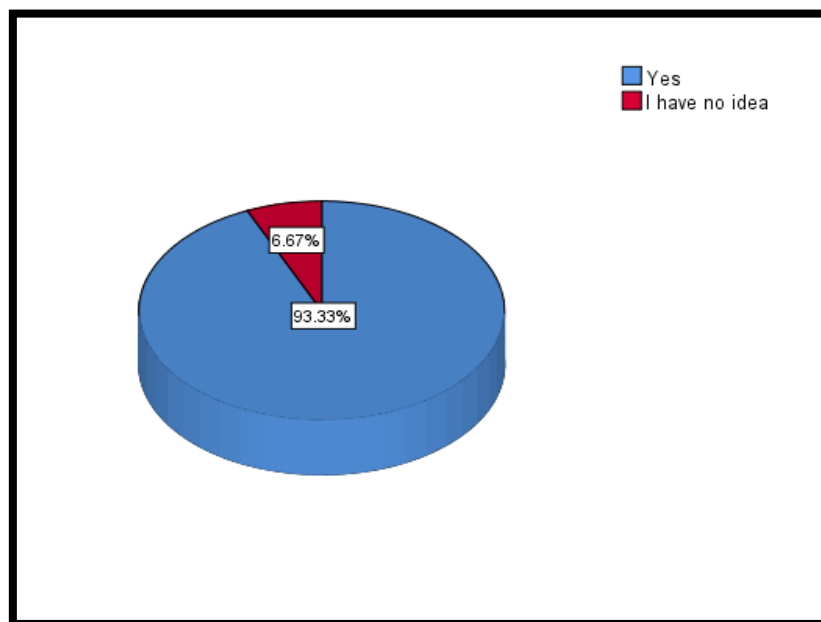
    This question aims to distinguish the role of vocabulary in boosting English communication skills among first-year students. The students are asked to reply with *yes*, *no*, or *I have no idea*. The results of the Figure (3.6) show students' positive perception towards the role of vocabulary, as the majority of them (93.3%) say*yes*. Nevertheless, the remaining 4 participants (6.67%) have no idea. Accordingly, vocabulary is recognised as a critical tool for developing communication skills, which may eventually lead to a good command of English.

Q3: How often do you understand what is communicated inside the classroom?

Figure (3.7)

Students' Perceptions Towards Understanding Classroom Language
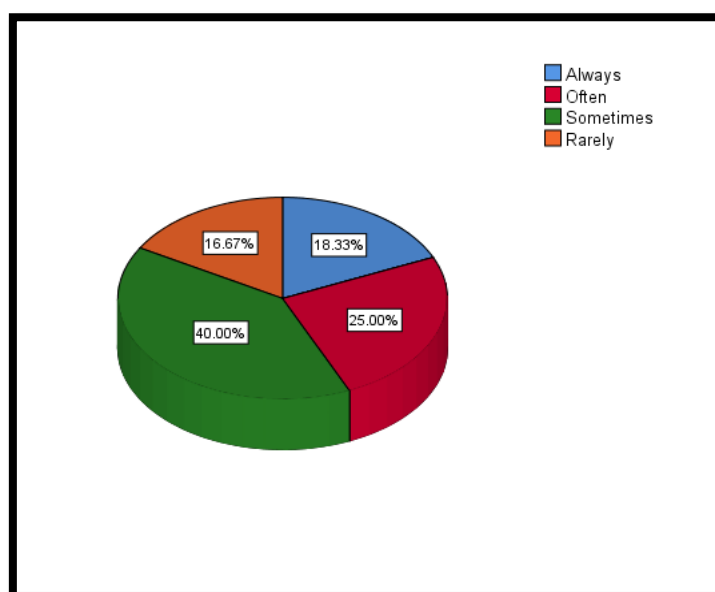
This question is designed to determine the extent to which students think they can understand what is communicated in the classroom. In this regard, the five-point Likert scale of *frequency*is used. As per Figure (3.7), out of 60 respondents (100%), 11 (18.3%) say that they *always*understand classroom communication, while 15 (25%) say they *often*understand. On the other hand, a large portion of participants (24), representing 40%, select*sometimes*. The other 10 respondents (16.7%) choose*rarely*. Therefore, first-year students show a moderate understanding of classroom communication.

Q4: What is your take on the importance of learning new words?

Figure (3.8)

Students' Perceptions Towards the Importance of Learning New Words
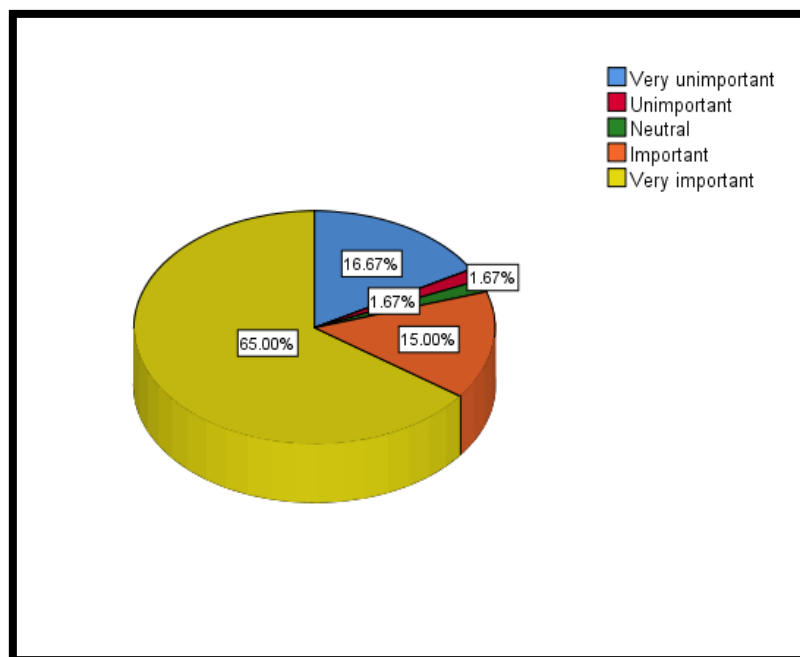
This question seeks to determine students' perceptionstowards the importance of learning new words. On this basis, the five-point Likert Scale of *importance*is employed. As presented in Figure (3.8), out of 60 (100%) respondents, 10 (16.7%) relate to learning new words as 'very unimportant'; 2 respondents (B and C) consider it as 'unimportant' and 'neutral', respectively, representing 3.4%. On the other hand, 9 respondents (15%) think it 'important'. Still, 39 (65%) find it 'very important'. Thus, we deduce that the majority of students regard knowing new words as an important aspect of vocabulary learning, which suggests the necessity for emphasizing vocabulary learning.

Q5: How do you learn new words?

I learn new words by:

A. Reading books

B. Listening to podcasts or audiobooks

 C. Engaging in conversations

D. Playing games

E. Using the dictionary

Figure (3.9)

Students ′ PerceptionsTowards the Techniques of Vocabulary Learning
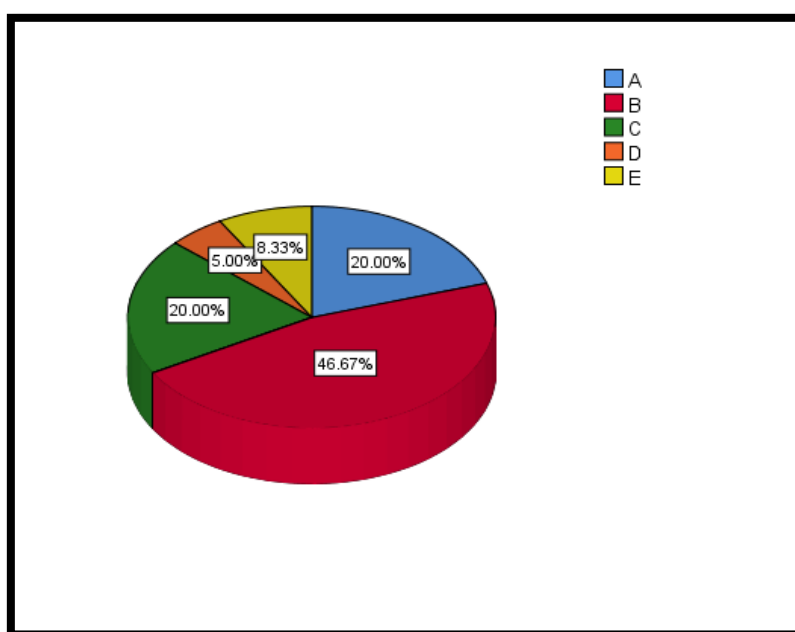
This question aims to discover the techniques used by students to learn new words. The participants are offered five different options: (A. Reading books; B. Listening to podcasts or audiobooks; C. Engaging in conversations; D. Playing games; and E. Using the dictionary). According to Figure (3.9), option (B) receives the highest support (46.7%), followed by option (A), representing 20%, and option C, representing 20%. The remaining options (D) and (E) receives the least support, representing 5% and 8.3% of the total population. The results indicate that listening to podcasts and audiobooks is the most adapted technique for learning

new words, followed by reading books and engaging in conversations. This highlights the fact that listening plays a major role in vocabulary learning. Additionally, other students dependes on recording new words, using flashcards, watching movies, and using writing notebooks. This indicates a diversity in learning vocabulary among first-year students.

Q6: What is the most difficult aspect of learning new words?

    A. Word use

    B. Word form

    C. Word meaning

Figure (3.10)

Students ' PerceptionsTowards the Most Difficult Aspect of Learning New Words
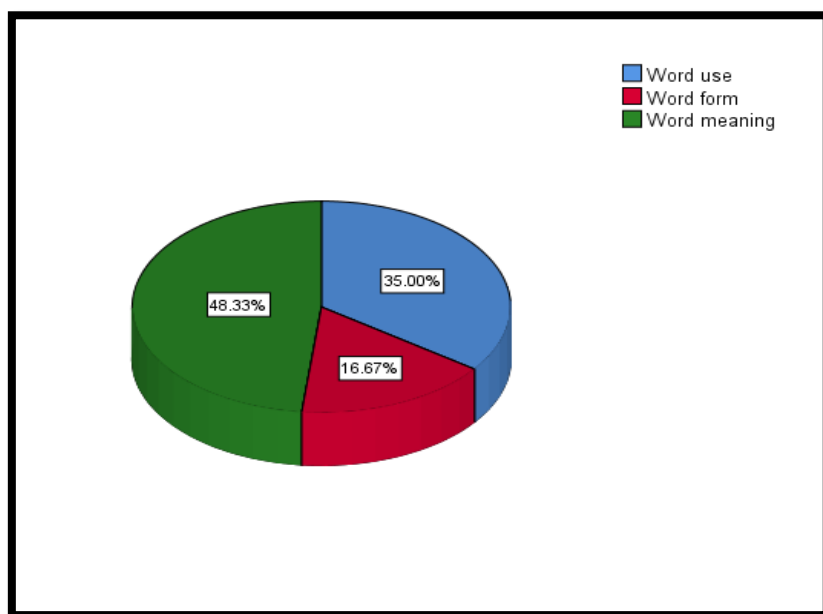
The question seeks to identify the most difficult aspects of learning new words according to students. Precisely, the use, form, or meaning of words. According to Figure (3.10), out of 60 participants (100%), 21 (35%) choose *word use*; 10 (16.7%) select word form; and 29

(48.3%) choose word meaning. The results show that the majority of first-year students considered word meaning as the most difficult aspect of vocabulary, which reflects a lack of word range techniques in specific contexts.

Q7: What do you think is most important for achieving language proficiency?

    A. Vocabulary acquisition

    B. Vocabulary knowledge

    C. Vocabulary retention

Figure (3.11)

Students' PerceptionsTowards the Most Important Aspect in Language Proficiency
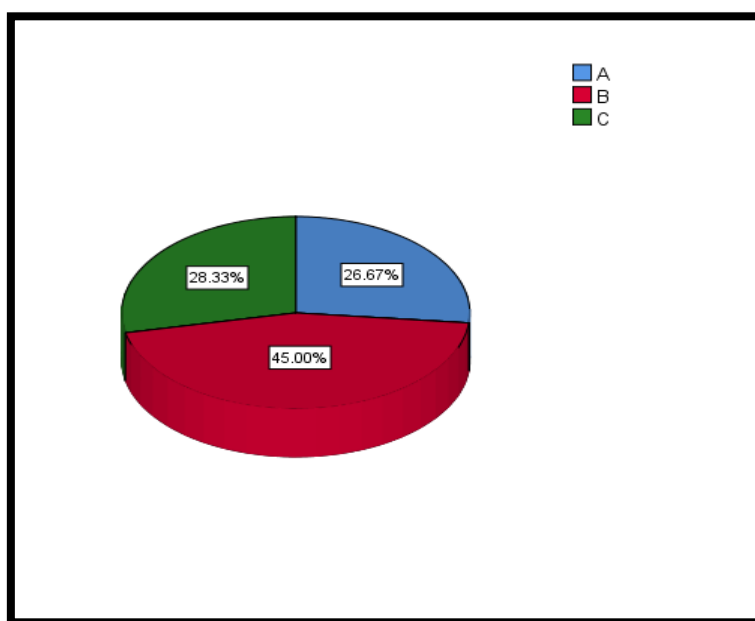
This question aims to investigate the most important aspect in vocabulary learning and whether students' level of proficiency is structured around acquisition, knowledge, or retention of vocabulary. Figure (3.11) display that out of 60 (100%), 16 (26.7%) reflect on vocabulary acquisition as the most important aspect. 27 (45%) support vocabulary knowledge.

Yet, 17 (28.3%) select vocabulary retention. The results indicate the significance of vocabulary knowledge in foreign language learning.

Q8: What do you think can hinder the process of acquiring new vocabulary?

A. Lack of grammar

B. Poor memorisation

C. Low-motivation

D. Lack of practice

Figure (3.12)

Students PerceptionsTowards the Barriers to Vocabulary Acquisition
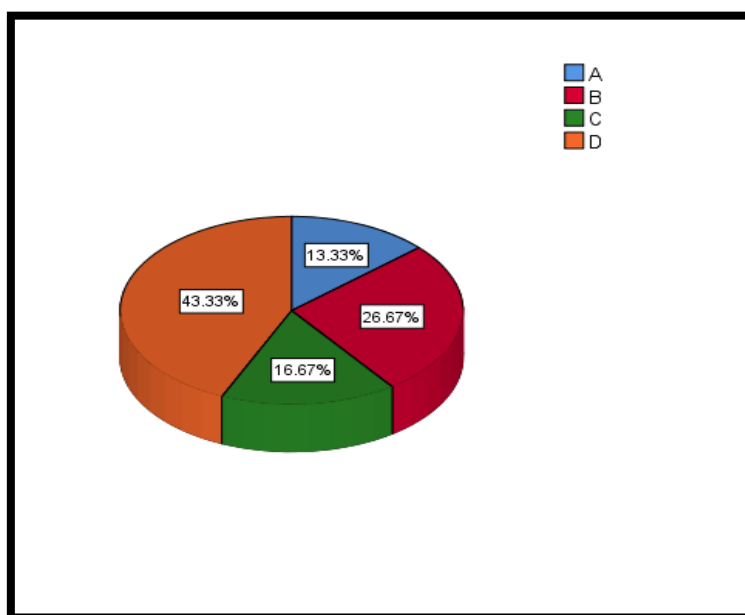
This question is designed to elaborate on the previous question, exploring the different obstacles in acquiring new words in the EFL context. According to Figure (3.12), out of 60 (100%), 8 (13.3%) say that a lack of grammar could hamper the vocabulary acquisition process. 16 (26.7%) think that poor memorisation could prevent the acquisition process. 10

(16.7%) indicate that a low level of motivation could deteriorate the acquisition process. However, 26 (43.3%) link that to a lack of practice. Accordingly, we deduce that the failure of the vocabulary acquisition process can occur due to a lack of practice. This result emphasises the importance of practice in learning vocabulary.

Q9: Do you think you have sufficient vocabulary knowledge to use in spoken and written communication?

Figure (3.13)

Students ' PerceptionsTowards the Importance of Vocabulary Knowledge in Spoken and Written Communication
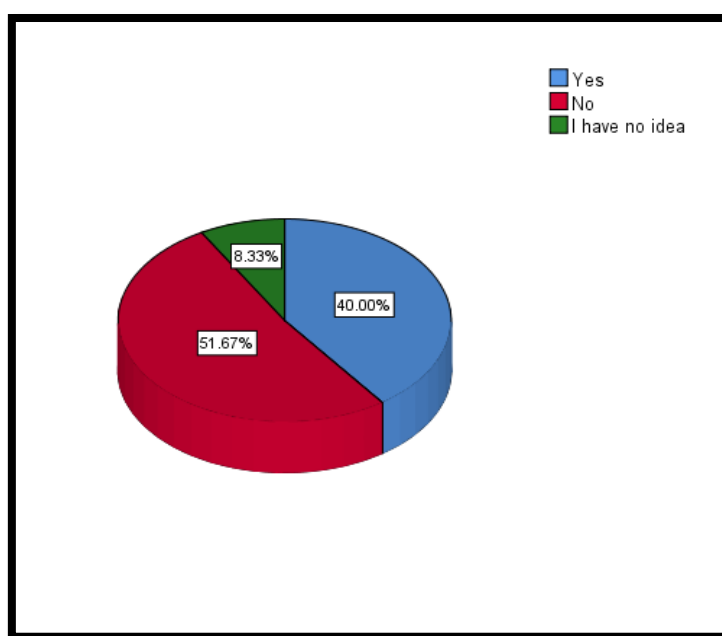
This question aims to figure out whether EFL students have sufficient vocabulary knowledge for effective written and spoken communication. As per Figure (3.13), 24 out of 60 participants, representing 40% reply by 'yes'. Nevertheless, 31 participants (51.7%) answer by 'no'. While the other 5 participants, representing the minority (8.3%) have no idea. Consequently, the results showcase the insufficient vocabulary first-year students had, which emphasises the need to enhance their knowledge of words.

Q10: What is your favourite vocabulary learning strategy, and why?

The primary purpose of this question is to determine the most feasible vocabulary learning strategy among first-year students. The participants are asked to determine their favourite strategy and justify it accordingly precisely. In this regard, out of 60 participants, 21 (%) provide the following answers, analysed in the following table:

Table (3.1)

Students' Favourite Vocabulary Learning Strategy

Vocabulary learning strategy	Number	Justification
Listening	**5**	▪ Audiobooks improve language through repetition. ▪ Listening improves learning, retention, and pronunciation of new words. ▪ Listening to podcasts improves hearing, practice, word use, and enjoyment. ▪
Speaking	**6**	▪ Classroom talk improves retention of

		new vocabulary.
		▪ Speaking improves language fluency.
		▪ Conversations improve the learning of new words and enhance the proficiency level.
		▪ Recording dialogues develops vocabulary retention.
		▪ Talking with native speakers improves word use in real contexts.
Reading	**5**	▪ Reading books improves word guessing, puts words in appropriate contexts, word retention, checks word meaning and use, and

			pronunciation of new words through storytelling.
Writing	**1**	▪	Taking notes improves vocabulary retention.
Watching	1	▪	Multimedia such as videos, movies…ect improves word use and speaking.
Mind mapping	1	▪	This strategy helps connect words together to remember them easily.
Flashcards	**1**	▪	Flashcards improve word retention.
Games	**1**	▪	Games make learning fun and challenging.

According to Table (3.1), speaking is considered the most favourite vocabulary learning strategy by most first-year EFL students, followed by listening and reading. This indicates the importance of oral communication in foreign language learning.

Section Three: EFL Students' PerceptionsTowards Artificial Intelligence, Vocabulary, and Dictionary Use

Q1: Do you prefer AI dictionaries over traditional dictionaries in learning vocabulary?

Figure (3.14)

Students' PerceptionsTowards AI Dictionaries and Traditional Dictionaries
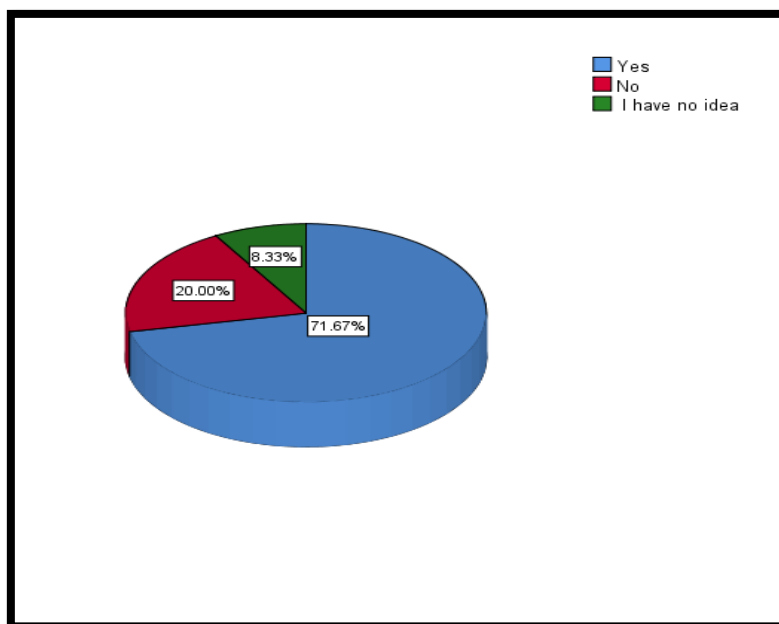
This question seeks to find out whether first-year EFL students preferred AI dictionaries over traditional dictionaries in learning vocabulary. As demonstrated in Figure (3.14), out of 60 participants (100%), 43 participants (71.7%) answer by yes while 12 (20%) answer by no. The participants justify their answers as follows:

Yes:

- AI dictionaries provide synonyms and clear pronunciation of words.
- They give superficial information about words.
- They give fast and easy definitions.

No:

- Traditional dictionaries are more accurate and reliable.

- They expose students to unexpected words.

- They improve memorisation of words.

- Traditional dictionaries are more authentic than AI dictionaries.

The results indicate that the majority of EFL students optimise their opportunities to learn vocabulary through AI dictionaries, enhancing their use of technology and online learning.

Q2: Do you use AI-learning tools such as dictionaries, mobile apps, or games to learn new vocabulary?

Figure (3.15)

Students' PerceptionsTowards the Use of AI Learning Tools in Learning New Vocabulary
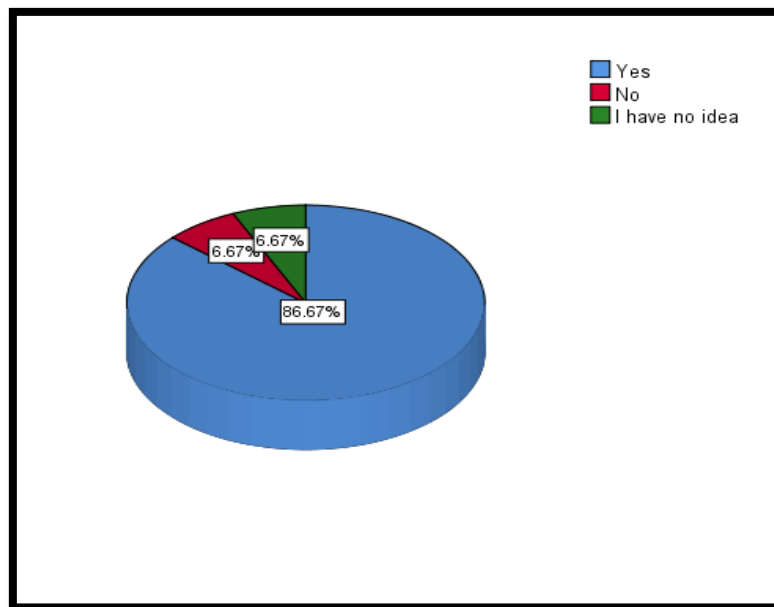
This question is designed to determine if first-year EFL students used AI-learning tools such as dictionaries, mobiles, or games to learn new words. As Figure (3.15) shows, out of 60 participants (100%), 52 reply by yes, representing the great majority (86.7%). Still, 4

participants (6.7%) say no, and the other 6.7% have no idea. Hence, the results demonstrate students' urge to use AI learning tools to learn vocabulary, which emphasises the importance of technology-based learning among EFL students.

Q3: If yes, which AI learning tools do you often use for vocabulary learning?

    A. Google Translate

    B. ChatGPT

    C. Duolingo

    D. AI-powered dictionaries (e.g., Oxford Dictionary/ Cambridge Dictionary)

Figure (3.16)

Students' Selection of AI Learning Tools
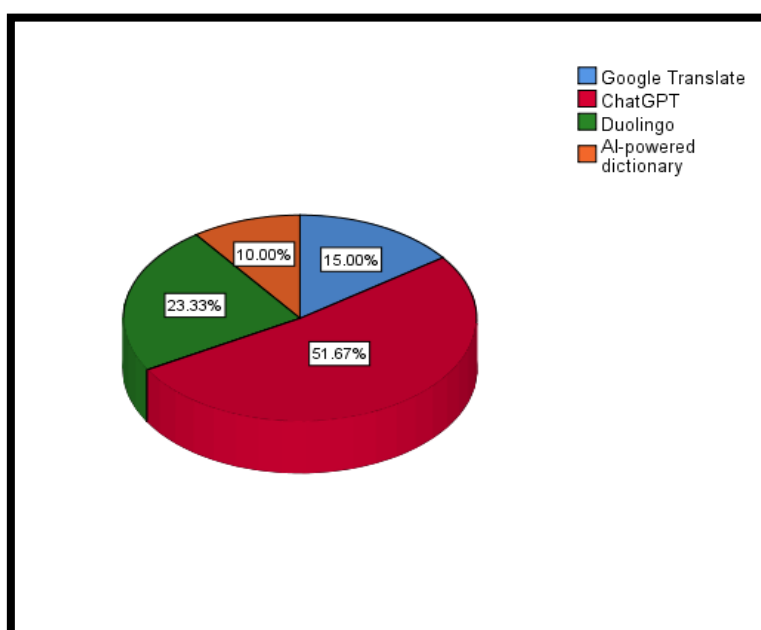
Associated with the previous inquiry, this question seeks to identify the sorts of AI learning tools that first-year EFL students use for learning vocabulary. The participants are given four different options (A-D). Figure (3.16) indicate that option (B) receives much support from students, representing 51.7%, followed by option (C), which represents 23.3%.

Yet, 9 participants (15%) select option (A) and 6 (10%) select option (D). The results show that the majority of students use ChatGPT in learning new vocabulary.

Q4: What features of AI dictionaries do you find most useful for vocabulary acquisition?

    A. Word definitions

    B. Word affixes (prefix/suffix)

    C. Synonyms and antonyms

    D. Collocations

    E. Audio pronunciation

Figure (3.17)

Students' Perceptions Towards the Features of AI Dictionaries
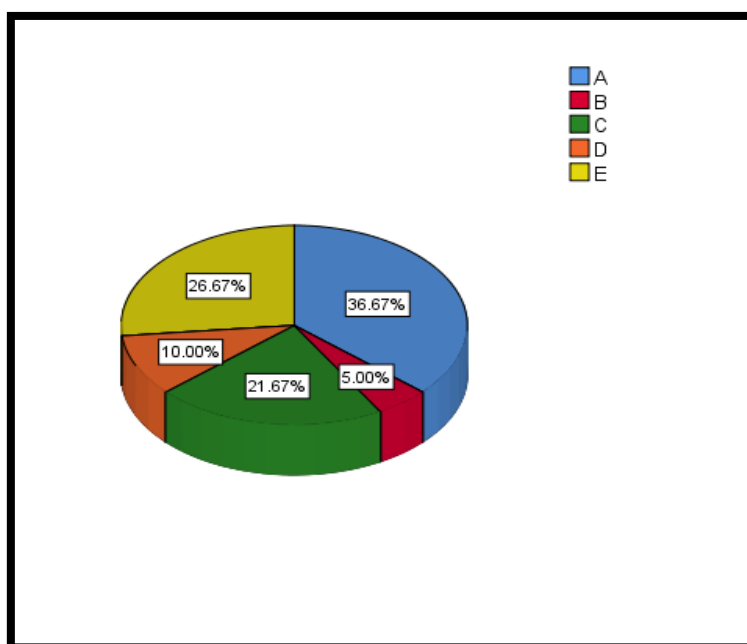
This question aims to explore the diverse features of AI dictionaries that first-year EFL students find more useful for vocabulary acquisition. Five options are suggested (A-E). According to Figure (3.17), 22 out of 60 select option (A), representing 36.7%; 3 (5%) select option (B); 13 (21.7%) choose option (C); 6 (10%) tick option (D); and 16 (26.7%)

selectoption (E). The results present the importance of word definitions in enhancing vocabulary acquisition, incorporated in AI dictionaries.

Q5: How can AI dictionaries increase the level of vocabulary acquisition?

This can happen by increasing:

A. Recognition

B. Retention

C. Concentration

D. Motivation

Figure (3.18)

Students' PerceptionsTowards the Role of AI Dictionaries in Increasing Vocabulary Acquisition
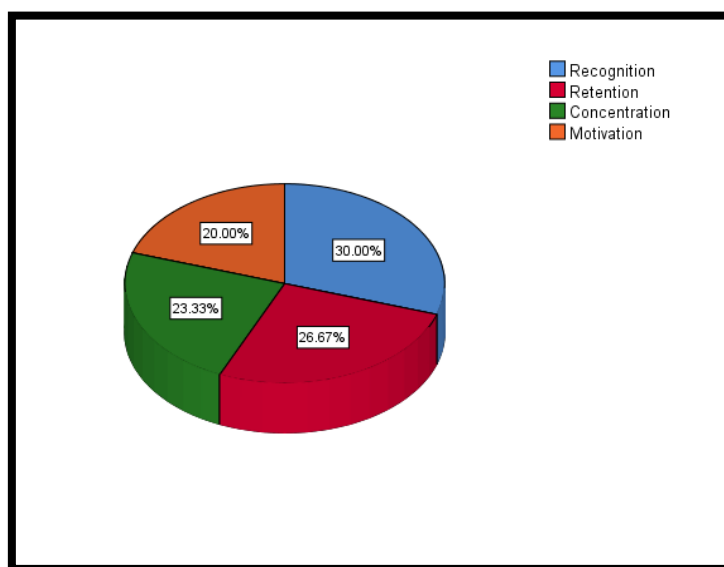
This question seeks to determine the method or technique AI dictionaries use to elevate the level of vocabulary acquisition among first-year students. Several options (A-D) are

suggested. Figure (3.18) demonstrates that *recognition* (A) is the most selected option, encompassing 30%, followed by *retention* (B). Additionally, a moderate number of participants (23.3%) believethat AI dictionaries improve their *concentration* (C), while 20% say that AI dictionaries support*motivation* (20%). According to the obtained results, we deduce that first-year students perceive*recognition* and *retention* as the two main benefits of AI dictionaries for vocabulary acquisition.

Q6: What are the pros and cons of using AI dictionaries for vocabulary acquisition?

This question aimed to explore the pros and cons of using AI dictionaries for vocabulary acquisition. The participants provided the following answers:

Pros:

- Facilitate learning of new words.
- Give deep meaning.
- Provide fast and easy access.
- Improve pronunciation.
- Provide synonyms and antonyms.
- Provide word definitions.
- Provide quick meaning.
- Facilitate grammar rules.
- Describe words.
- Provide offline access.

Cons:

- Make repetitions.

- Make errors.

- Lack of cultural meaning and idiomatic explanations.

- Lack of deep meaning.

- Lack of accuracy in specific contexts.

The analysis of this question shows that participants valued AI dictionaries for their efficiency and broad functionality, particularly in facilitating vocabulary learning. However, they also highlight the importance of using AI tools in combination with other learning methods. This balanced perspective emphasises the need for critical engagement with AI tools in the EFL context.

Q7: The good use of AI dictionaries allows you to better:

A. Comprehend high-frequency words

B. Memorise new words

C. Guess the meaning of words

D. Improve written vocabulary and build language accuracy

E. Improve spoken vocabulary and build language fluency

Figure (3.19)

Students' PerceptionsTowards the Advantages of AI Dictionaries
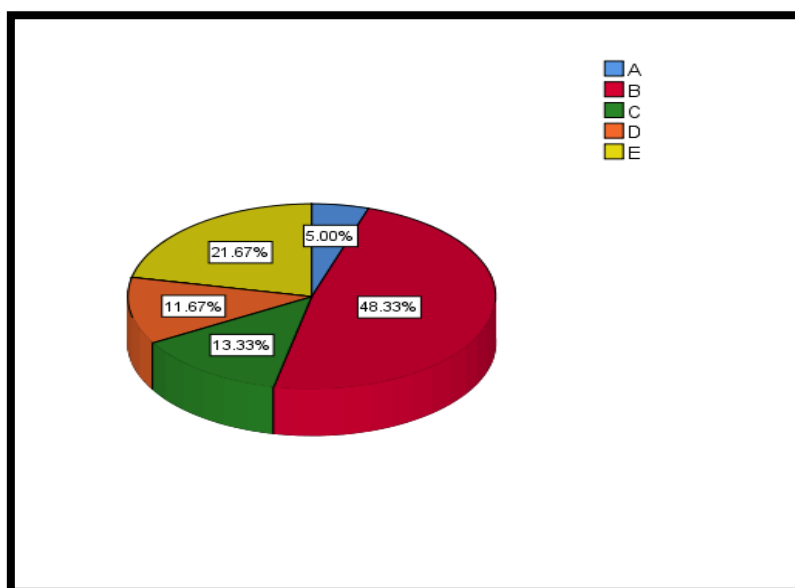
This question is designed to explore the benefits of AI dictionaries. The participants are given five options (A-E) as shown in Figure (3.19). The results show that a large portion of participants (29), which represents 48.3% of the population, say that AI dictionaries help them memorise new words. Also, 13 participants (21.7%) associate AI dictionaries with spoken vocabulary and fluency development. However, the remaining participants (18) believe that AI dictionaries are beneficial in guessing the meaning of words, improving written vocabulary and building accuracy, and enhancing comprehension of high-frequency words, representing 30%. Therefore, AI dictionaries are recognised as a critical tool in enhancing students' cognitive abilities.

Q8: AI dictionaries can help students improve their vocabulary, addressing their knowledge, word range, and language skills—do you agree?

Figure (3.20)

Students' PerceptionsTowards the Role of AI Dictionaries in Improving Vocabulary and Language Skills
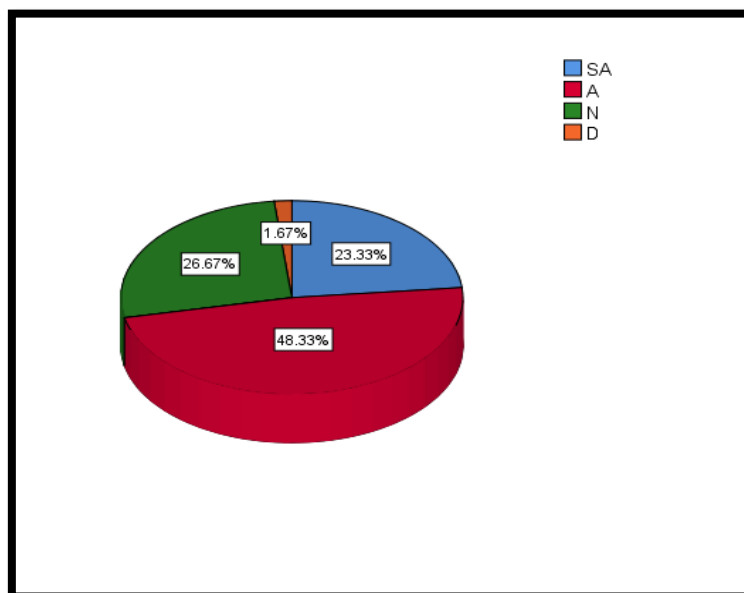
This question aims to explore first-year students' perceptionstowards the role of AI dictionaries in improving vocabulary learning, knowledge, word range, and language skills. In this regard, the five-point Likert Scale of *Agreement*is employed. Figure (3.20) indicate that 14 participants (23.3%) strongly agree; 29 participants (48.3%) agree; 16 participants (26.7%) neither agree nor disagree. Only 1 participant 1.7%) disagree. The inferred results stressthe role of AI dictionaries in vocabulary development.

Q9: How do you assess the experience of learning vocabulary through the use of AI dictionaries?

A. Very unsatisfied

B. Unsatisfied

C. Neutral

D. Satisfied

E. Very satisfied

Figure (3.21)

Students ' PerceptionsTowards AI Experience in Learning Vocabulary
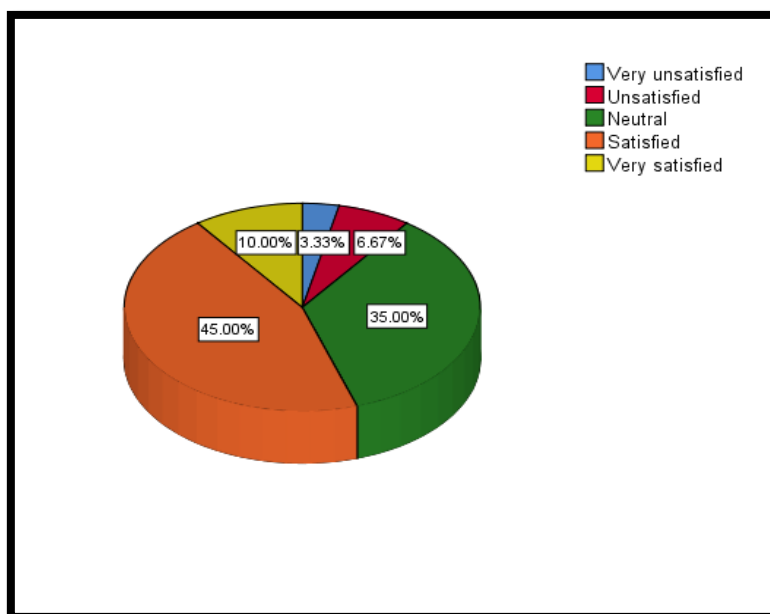
This question is designed to explore students' perceptionstowards AI use in learning vocabulary. In essence, the five-point Likert Scale of *Satisfaction*is used. The results of Figure (3.22) show that 2 participants (3.3%) are*very unsatisfied*; 4 participants (6.7%) are*unsatisfied*; 21 participants (35%) show a neutral perception. On the other hand, 27 participants (45%) are*satisfied* and 6 participants (10%) are*very satisfied.* The results further indicate that the majority of students find the AI experience satisfying, reflecting on the benefits of technology in enhancing vocabulary learning.

Q10: Do you think incorporating AI into your EFL classroom to teach vocabulary would be beneficial?

A. Very much so

B. Somehow

C. I am not sure

D. Not at all

Figure (3.22)

Students' PerceptionsTowards AI Incorporation in EFL Classrooms to Teach Vocabulary
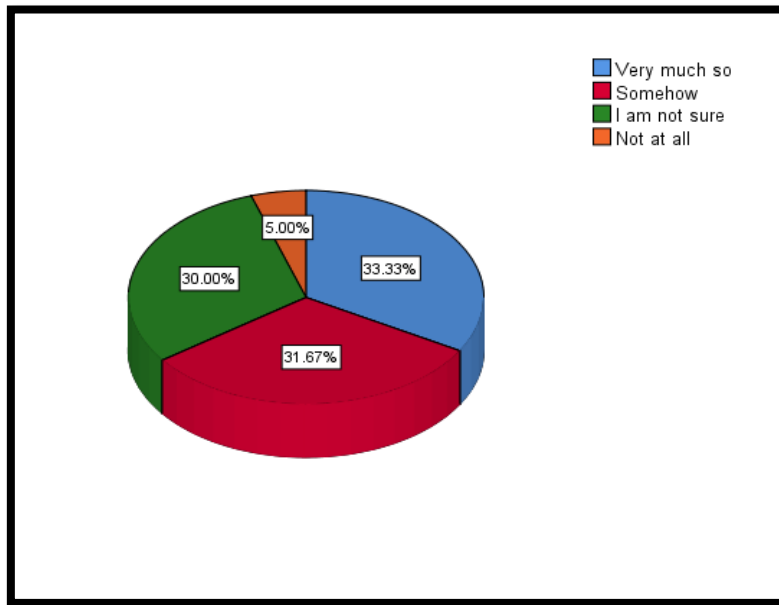
This question seeks to determine the participants' level of agreement regarding the benefits of AI incorporation in the EFL classroom for teaching vocabulary. On this basis, the four-point Likert Scale of *Agreement*is adopted. According to Figure (3.22), a significant portion of the participants, representing 33.3% reply by *very much so;* 31.7% answered by *somehow;* 30% are not sure. Whereas, the minority (5%) answer by *not at all.* Therefore, it can be deduced that AI incorporation in the EFL classroom receives much support from first-year students, showing a strong positive perception.

2.2.2 Teachers' Interview

The teachers' interview is conducted with five teachers of English at the University of Mohamed Khider, Biskra. It consists of three main sections (Q1-Q16) that explores integral elements of general knowledge, vocabulary teaching, and the integration of technology in the EFL classroom to teach vocabulary. In this regard, thematic analysis is used to analyse the interview's questions, which falls into the qualitative continuum.

Engagement Questions: General Knowledge

Item1. What degree do you hold?

Table 1

The academic qualifications of the participating EFL teachers

Interviewee	The academic qualifications of the participating EFL teachers
1	Master
2	Master
3	Master
4	Doctorate
5	Doctorate

The responses reveals that the majority of the interviewed teachers held advanced academic degrees. Participants 1, 2, and 3 reported holding a Master's or Magister degree, while Participants 4 and 5 held a Doctorate (PhD).this data contributed to emergence that

they have Strong Academic Background which reflects the participants' high level of academic training, which likely informs their ability to evaluate and integrate pedagogical innovations.The results of this question reveal that EFL teachers held a good qualification, ranging from Master's/Magister's to PhD/ Doctorate, which reflects their inclination to teach English at the university.

Item 2. How long have you been teaching English at the University of Mohamed Khider?

Table 2

Years of Teaching English at the University of Mohamed Khider

Interviewee	Years of Teaching English at the University of Mohamed Khider
1	4 years
2	12 years
3	13 years
4	13 years
5	17 years

This question is designed to determine the period spent by EFL teachers in teaching English at the University of Mohamed Khider.

The responses indicates that teachers have a solid background in teaching English, reflecting their distinguished experience, estimated at four to seventeen years. This result

suggests that EFL teachers have a good command of English, which allows them to teach English at the tertiary level.

Item 3 . Have you taught first-year before, or is it your first time?

Table 3

Previous Experience Teaching First-Year Students

Interviewee	Previous Experience Teaching First-Year Students
1	Yes,I have
2	I have taught L1 before
3	I have been teaching 1st years for many years
4	Yes,I have
5	This is actually my third time teaching first-year students.

This question seeks to explore whether teachers of English at the University of Mohamed Khider, Biskra, taught first-year students before or if it was their first time. The five teachers say that they had taught first-year students before and for many years. This can imply that EFL teachers have the knowledge, experience, and tendency to teach first-year students.

Item 4 . What is first-year students' level of English proficiency?

Table 4

Proficiency Level of First-Year Students

Interviewee	*Proficiency Level of First-Year Students*
1	Below the average
2	Medium.
3	Good for the minority and average for the majority.
4	Between average and good(issues of grammar,vocabulary,fluency,and comprehension).
5	Between average and good (issues of grammar, speaking, and listening).

This question prompts the exploration of EFL teachers' evaluation of their students' English proficiency level. The teachers answered as follows:

The responses of the five teachers, reveals diverse critical assessments of first-year students' English proficiency level. Most students have an average/medium to good level, with noticeable difficulties in grammar, vocabulary, fluency, comprehension, speaking, and listening. This result emphasises the need for teaching productive and receptive skills for first-year students.

Exploration Questions: PerceptionsTowards Teaching Vocabulary in EFL Classrooms

Item 1. What are your objectives through teaching vocabulary?

Table 5

Teachers' Objectives in Teaching Vocabulary

Interviewee	Teachers' Objectives in Teaching Vocabulary
1	Develop word use in an appropriate context
2	Enhance comprehension.
3	Enhance word storage, word usage, word meaning, speaking reading fluency.
4	Improve comprehension, communication, idea expression, reading, listening, and speaking skills.
5	Improve communication and self-confidence in written and spoken contexts.

In response to the question regarding the objectives of teaching vocabulary, the analysis of teachers' responses reveals several recurring themes that reflect a comprehensive and multidimensional view of vocabulary instruction. several teachers emphasized the importance of teaching vocabulary in a meaningful and appropriate context. This reflects an awareness

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that lexical knowledge is not merely about memorizing words, but about using them accurately and effectively in communicative situations. For instance, Teacher 1 focused on developing word use in an appropriate context. In addition, improving students' comprehension was another dominant theme. Teachers highlighted vocabulary instruction as a means to enhance both reading and listening comprehension, which are foundational skills in language acquisition. In this regard, Teachers 2 and 4 underlined the role of vocabulary in improving comprehension. Moreover, teachers pointed to the enhancement of multiple linguistic skills. Vocabulary teaching was seen as contributing to students' ability to understand word meanings, store and recall lexical items, and use them effectively across different modalities, especially in speaking and reading. As an example, Teacher 3 mentioned word storage, usage, meaning, and fluency in speaking and reading. Furthermore, communication, both oral and written, was a recurring goal among teachers. Vocabulary teaching was perceived as a key element in facilitating effective expression and interaction. Specifically, Teachers 4 and 5 noted improvement in communication and expression skills. Finally, confidence building an affective dimension—also appeared in the responses, particularly regarding students' confidence. Vocabulary instruction was believed to support not only language performance but also self-assurance in using the language in diverse contexts, as highlighted by Teacher 5, who emphasized the development of self-confidence in spoken and written communication.about memorizing words, but about using them accurately and effectively in communicative situations. Teacher 1 focused on developing word use in an appropriate context as highlighted by Teacher 5, who emphasized the development of self-confidence in spoken and written communication.

Therefore, the results highlights different objectives of teaching vocabulary, indicating the adoption of a holistic approach. Also, it emphasises the importance of lexical,

comprehension, communicative, listening, reading, writing, and speaking skills in teaching vocabulary. This highlights the importance of developing language skills and improving cognitive function.

Item 2 . What distinguishes vocabulary learning, acquisition, and retention?

Table 6

Distinctions Between Vocabulary Learning, Acquisition, and Retention

Interviewee	Distinctions Between Vocabulary Learning, Acquisition, and Retention
1	No idea.
2	No idea.
3	Vocabulary learning and acquisition are generally used as synonyms, as both refer to the process of acquiring/learning and expanding one's repertoire/storage of words and meanings in a particular language. However, there is a distinct difference as "acquisition" is more about the natural/unconscious process of grasping words and expressions during the early developmental period of a human being (the 10 first years of his life), while "learning" is rather a

	conscious process that happen after the period of acquisition. Retention is about recalling and remembering information (what has been learnt/acquired) after some time, to be used in the future.
4	No idea.
5	Vocabulary learning refers to the initial process of learning new words, while acquisition is when these words are internalised and used in natural contexts. Retention is the ability to remember and use these words over time. The key difference lies in how deeply the words are embedded in the students' memory and their ability to use them effectively.

The interviews' data exposes that the majority of teachers (Teachers 1, 2, and 4) openly expressed no knowledge or understanding of the distinctions between the three vocabulary concepts. This theme reflects a knowledge gap in fundamental lexical and psycholinguistic theory among some practitioners. As a result, this highlights the need for more targeted professional development in areas related to language acquisition and vocabulary theory.In contrast, teachers who provided explanations demonstrated a clear differentiation between

vocabulary learning as a conscious, intentional effort, and vocabulary acquisition as a more natural and subconscious process. For example, Teacher 3 explained that acquisition typically occurs during early childhood, whereas learning happens later and involves direct instruction.Additionally, both Teacher 3 and Teacher 5 identified retention as a separate stage, associated with the ability to store, recall, and reuse vocabulary over time. It is viewed as the outcome of either learning or acquisition and is considered critical to long-term language use.Thus, this theme highlights teachers' recognition of the cognitive dimensions of vocabulary pedagogy and the importance of memory-related strategies in effective vocabulary instruction.

The analysis reveals two major patterns: first, a significant lack of conceptual clarity among the majority of teachers regarding key vocabulary processes; second, a strong theoretical grasp among others who differentiated between learning (conscious effort), acquisition (natural exposure), and retention (memory-based performance).These insights underscore the importance of enhancing teachers' theoretical understanding of vocabulary development processes to bridge the gap between linguistic theory and pedagogical practice. A deeper awareness of these distinctions could inform more effective vocabulary instruction and long-term language development in EFL contexts.

Item 3. To what extent is teaching vocabulary important for good communication skills in English?

Table 7

Teachers' Perspectives on the Importance of Vocabulary Teaching

Interviewee	Teachers' Perspectives on the Importance of Vocabulary Teaching
1	To a very good extent
2	To a very good extent
3	To a very good extent
4	To a very good extent
5	To a very good extent

The analysis reflects an overall positive perception towards the role of vocabulary, considering it the centrepiece of spoken and written communication. Some teachers argued that without grammar, a little can be conveyed, but without vocabulary, nothing can be conveyed. This explains the urge to develop lexical skills and highlights the importance of teaching the aspects of words, including use, form, and meaning. Additionally, the teachers stressed the effectiveness of vocabulary as the foundation for speaking and writing skills. Hence, it helps increase understanding, self-expression, social relationships, construct meaningful sentences, and improve motivation and engagement. In support of these goals, AI-assisted tools can track students' usage, proficiency, and progress, adapt to varying levels of difficulty, correct pronunciation, and promote engagement and interaction. Furthermore, AI-assisted tools can enhance word retention, interactive learning, and word use.

Item 4. Do you find teaching vocabulary to freshmen students a kind of a challenging task? If yes, what sort of difficulties do you often encounter ?

Table 8

Teachers' Perceptions of the Challenges in Teaching Vocabulary to Freshman Students

Interviewee	Teachers' Perceptions of the Challenges in Teaching Vocabulary to Freshman Students
1,2,3 and 5	Yes,Writing obstacles include a low level of proficiency, over-reliance on mobile phones, lack of reading skills, and lack of practice. Limited prior exposure to English vocabulary, disability in retaining new words, and lack of motivation or engagement. Varied existing levels of language proficiency in one class (high vs. low achievers, differences in students' learning styles, difficulty in finding suitable teaching methods, weak level, limited knowledge, word difficulty, lack of understanding, vocabulary size, lack of motivation and engagement, adjustable learning environment, limited exposure to language, and difficulty in remembering new words.
4	No,Nothing specific.

The responses reveals that most EFL teachers perceive vocabulary instruction as a difficult task, reflecting a series of interconnected difficulties that may pose serious

pedagogical concerns. To begin with, most of the identified obstacles were related to the students themselves, particularly their low proficiency level, poor reading habits, lack of exposure, and difficulty in retention. Furthermore, Teachers 1, 2, 3, and 5 highlighted difficulties stemming from the heterogeneity of student levels and learning styles, which complicate planning and teaching. For example, this includes the presence of both high and low achievers in the same class, as well as the lack of appropriate strategies to deal with different student types. In addition, there was also mention of difficulties related to word complexity, abstract vocabulary, and lack of contextual understanding, making vocabulary instruction even more challenging. This suggests that students struggle with both word meaning and word use in context. On the other hand,teacher 4 indicated that they did not perceive vocabulary teaching as a challenging task; however, no further justification or explanation was provided.

Item 5. Vocabulary can be taught using several strategies and methods. What kind of strategies or methods do you use in teaching vocabulary to first-year students?

Table 9

Strategies and Methods Used in Teaching Vocabulary to First-Year Students

Interviewee	Strategies and Methods Used in Teaching Vocabulary to First-Year Students
1	Genre- approach, process-approach, and AI-assisted tools.
2	Nothing specific.
3	Reading in context, practice, vocabulary-in-check, conversations, classroom interaction, writing word-mapping, and use of technology.
4	Contextual learning, visual aids, games, interactive activities, and technology-based tools.
5	Flashcards, context-based learning, vocabulary games, technology tools, reading, and watching.

This question seeks to uncover the pedagogical strategies employed by EFL teachers when teaching vocabulary to first-year students. Several strategies and methods are reported by teachers for teaching vocabulary to first-year students. Contextual learning emerges as a major strategy, with Teachers 3, 4, and 5 emphasising learning words in context through

reading activities, dialogues, or sentence construction. For instance, Teacher 3 states, "Reading in context, vocabulary-in-check, conversations," while Teacher 4 mentions "Contextual learning," and Teacher 5 highlights "Context-based learning, reading, watching." This theme shows an understanding of depth-of-processing theory, which asserts that contextual and semantic engagement promotes better retention. In addition, the use of technology and AI tools emerges as a notable theme, showing how digital tools are increasingly becoming part of EFL vocabulary pedagogy. Teacher 1 mentions "AI-assisted tools," and Teachers 3, 4, and 5 refer to "technology tools" and "watching" as part of their method. This reflects an evolving pedagogical practice where multimedia input and intelligent learning platforms facilitate vocabulary acquisition, particularly in motivating students and personalising learning. Moreover, interactive and game-based methods are cited by Teachers 4 and 5 as effective ways to engage students and reinforce vocabulary, with Teacher 5 also mentioning the use of flashcards as a visual and mnemonic tool. This theme aligns with constructivist learning theories, where engagement, enjoyment, and active participation are key to knowledge retention. Furthermore, one respondent, Teacher 1, refers to structured approaches like "Genre-approach" and "Process-approach," suggesting a writing-focused method that integrates vocabulary into larger language use patterns. This represents a curriculum-integrated view of vocabulary instruction, embedding lexical learning within discourse and composition frameworks. In addition, metacognitive and visual techniques are observed through the use of word-mapping (Teacher 3) and flashcards (Teacher 5), which promote the active processing and categorisation of lexical items through cognitive strategies. Finally, an outlier case is reported by Teacher 2, who indicates a lack of strategy, suggesting either a lack of methodological clarity or reliance on spontaneous or unstructured teaching.

In summary, the responses reveals that EFL teachers adopt a diverse and eclectic set of vocabulary teaching strategies, with a strong emphasis on contextual learning, technology integration, interactive and game-based approaches, cognitive and visual aids, and genre/process-based instruction. These strategies reflect teachers' efforts to adapt to students' needs, preferences, and levels, while also engaging them through modern, multimodal methods. Moreover, the findings highlight a move toward student-centred and flexible vocabulary pedagogy, although the presence of unstructured practices points to a need for more consistent methodological training.

Item 6 . What areas of research in second and foreign language vocabulary have implications for English language teaching

Table 10

Research Areas in Vocabulary with ELT Implications

Interviewee	Research Areas in Vocabulary with ELT Implications
1	No idea.
2	No idea .
3	Teaching practices and strategies, incidental learning, intentional learning, recall and repetition, importance of context, idioms and collocations, learning strategies, technology use, and interlanguage.
4	Spaced repetition and memory techniques, the role of context vs. rote memorisation, and the

		impact of AI and technology on vocabulary retention.
5		Vocabulary acquisition,frequency in vocabulary learning,the impact of incidental learning, and the use of technology in vocabulary instruction.

The teachers' responses reveals both diverse insights and a notable knowledge gap among them.First, a lack of research awareness appears, Teachers 1 and 2 state they have no idea about vocabulary-related research. This reflects a significant theoretical disconnect between academic research in second language acquisition (SLA) and classroom practice. The absence of knowledge about research implications may indicate a limited engagement with academic literature, which can hinder evidence-based teaching. Second, pedagogical strategies and teaching practices are recognised by Teachers 3 and 5, who identify key research areas that directly influence teaching, such as intentional vs. incidental vocabulary learning, use of recall and repetition, and the importance of context over rote memorisation. Teacher 3 highlights "teaching practices and strategies, incidental learning, importance of context," while Teacher 5 notes "vocabulary acquisition and frequency." These themes reflect core principles from applied linguistics, notably the work of researchers such as Nation, Schmitt, and Ellis,, who emphasise how pedagogical choices impact lexical acquisition. Third, memory and retention techniques emerge, where spaced repetition, memory strategies, and frequency effects are commonly referenced. Teacher 4 mentions "spaced repetition and memory techniques," and Teacher 5 emphasises "frequency in vocabulary learning." This

shows some teachers are aware of cognitive psychology's contribution to vocabulary pedagogy, including the importance of spaced input and frequency-based word exposure. Fourth, lexical features like idioms and collocations appear in responses, as Teacher 3 cites "idioms and collocations." This aligns with formulaic language research that highlights the role of multi-word expressions in achieving communicative competence. Fifth, technology and AI integration are mentioned by Teachers 4 and 5, who note the role of technology and AI in vocabulary teaching and learning, including their potential to enhance retention, engagement, and personalisation. Teacher 4 states "impact of AI and technology on vocabulary retention," and Teacher 5 refers to the "use of technology in vocabulary instruction." This theme underscores a growing recognition of digital-assisted vocabulary learning, including mobile learning, apps, and AI-driven platforms, as emerging trends in SLA research. Finally, interlanguage development is mentioned by only one teacher ,Teacher 3, who references "interlanguage," reflecting a more advanced understanding of SLA theory and how vocabulary learning contributes to students' evolving linguistic systems.

In general, the data indicates a clear division between teachers who possess a strong awareness of research-based vocabulary instruction and those who are unfamiliar with such knowledge. The themes identified suggest that research in vocabulary acquisition, memory strategies, incidental learning, lexical patterns, and technology use can meaningfully inform classroom practices. However, the presence of uninformed responses highlights the persistent gap between theory and practice, suggesting an urgent need for ongoing teacher training, greater access to SLA research, and integration of research findings into curriculum design and professional development.

Exist Questions: Perceptions Towards Technology-Integration in EFL Classrooms to Teach Vocabulary

Item 1. The integration of technology in the EFL classroom has gained momentum among second and foreign language researchers. Do you find it even helpful in teaching vocabulary?

Table 11

EFL Teachers' Perceptions of Technology Integration in Vocabulary Instruction

Interviewee	EFL Teachers' Perceptions of Technology Integration in Vocabulary Instruction
1,2,3,4 and 5	Yes,Technology enhances engagement, personalisation, and learning accessibility. Technology makes vocabulary learning more engaging and effective, enhances practice, and reinforces word use inside and outside the EFL setting (e.g., flashcards, vocabulary apps, or interactive websites).

This question explores EFL teachers' views regarding the usefulness of technology integration in vocabulary instruction. All five teachers respond affirmatively, highlighting a unified and enthusiastic endorsement.first,enhanced engagement and motivation appear as a dominant theme across responses, with teachers observing that interactive tools and applications (e.g., flashcards, apps, games) make vocabulary instruction more engaging, enjoyable, and stimulating, increasing student participation and enthusiasm for vocabulary learning. This reflects how technology taps into intrinsic motivation and offers multi-sensory

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input, which is essential for vocabulary retention. Second, personalisation and student autonomy are emphasised, as teachers state that technology allows for personalised learning paths, enabling students to learn at their own pace and revisit material as needed. Technology supports differentiated instruction by accommodating diverse learning styles, aligning with universal design for learning (UDL) principles, which advocate for varied means of representation and engagement to meet individual student needs. Third, accessibility and extended learning emerge as a common theme, where technology facilitates anytime-anywhere learning, allowing students to access vocabulary materials both inside and beyond the classroom. Teachers note that digital tools promote continuous exposure and reinforcement of vocabulary, illustrating how blended learning approaches can enhance vocabulary acquisition beyond the limits of classroom time. Finally, pedagogical enhancement is mentioned, as some responses point to the role of technology in improving teaching practices, allowing teachers to deliver content more effectively and monitor student progress. The use of digital tools leads to more efficient instruction, tracking, and feedback, indicating a growing alignment between instructional design and technology-mediated vocabulary pedagogy.

In summary , the responses reveals a strong consensus among EFL teachers on the effectiveness of technology integration in vocabulary instruction. The following key benefits are highlighted: increased student engagement and motivation, greater personalisation and autonomy, improved accessibility and flexibility, and enhanced teaching efficiency and feedback mechanisms. These findings suggest that EFL teachers are highly receptive to technological tools and recognise their pedagogical value, particularly in diversifying instructional methods and responding to the dynamic needs of language students.

Item 2. What sort of technology tools and devices do you use to teach vocabulary to first-year students?

Table 12

Technology Tools and Devices Used in Teaching Vocabulary to First-Year Students

Interviewee	Technology Tools and Devices Used in Teaching Vocabulary to First-Year Students
1	AI-assisted tools (e.g., AI-dictionaries).
2	Listening tools(e.g., mini speaker).
3	Vocabulary learning tools (e.g., Duolingo, YouTube videos, songs, or social media).
4	AI-powered dictionaries and flashcard apps.
5	Vocabulary learning tools(e.g., Quizlet, Duolingo, whiteboards, and multimedia).

This question aims to identify the types of technological tools and devices that EFL teachers use to teach vocabulary to first-year students. The analysis of their responses reveals a diverse and creative integration of both traditional and AI-driven tools. First, AI-assisted tools emerge as a prominent theme, especially the use of artificial intelligence-based tools such as AI-powered dictionaries that provide smart suggestions, contextual definitions, and pronunciation support. Teachers 1 and 4 mention using "AI dictionaries" and "AI-assisted tools," which reflects a forward-looking pedagogical trend where teachers start to leverage AI capabilities to facilitate deeper and more autonomous vocabulary learning. Second, mobile apps for vocabulary learning are widely reported, including Duolingo (Teachers 3 and 5) for gamified and personalised vocabulary practice, and Quizlet (Teacher 5) for flashcard-based

repetition and student-generated content. Teacher 3 also cites social media, songs, and YouTube videos as informal yet effective sources of vocabulary input. These apps offer flexible, interactive, and user-friendly platforms that promote spaced repetition, incidental learning, and multi-modal input. Third, multimedia and audio tools are mentioned, with teachers referring to resources such as videos, music, and mini speakers to support listening-based vocabulary acquisition. Teacher 2 refers specifically to listening tools like mini speakers, and Teacher 5 mentions general multimedia and whiteboards. This theme underscores the importance of auditory and visual stimuli in supporting vocabulary retention, particularly for auditory and visual students. Finally, visual and interactive tools are highlighted through the use of flashcards (digital or physical), which are noted as effective for visual reinforcement, memory association, and review. Teachers 4 and 5 cite flashcard apps as part of their toolkit, reflecting the use of visual mnemonics and low-tech aids that complement more advanced digital tools.

Item 3. Can you replace traditional teaching methods with modern ones, such as using AI-powered dictionaries to teach vocabulary to first-year students?

Table 13

EFL Teachers' Perspectives on Replacing Traditional Vocabulary Teaching Methods with AI-Powered Tools

Interviewee	EFL Teachers' Perspectives on Replacing Traditional Vocabulary Teaching Methods with AI-Powered Tools
1	yes
2	yes
3 and 4	Neutral, AI complements traditional methods but

	does not replace them. Blended learning (AI + human instruction) is most effective.
5	AI-powered dictionaries cannot replace traditional teaching methods. While AI tools provide instant definitions and examples, students still need face-to-face interaction, structured lessons, and the opportunity to practise vocabulary in real-world contexts.
	No

This question aims to explore EFL teachers' views on whether modern technological methods, specifically AI-powered tools like smart dictionaries, can replace traditional teaching methods in vocabulary instruction for first-year students. The data presented in Table 13 reveals a spectrum of perceptions. Teacher 1 and Teacher 2 show full acceptance of replacement (modern-centred view); this appears in their responses, as they respond positively, expressing confidence that modern tools like AI-powered dictionaries can effectively replace traditional methods in vocabulary teaching. Their justification focuses on the efficiency of access to information, student autonomy and engagement, and faster exposure to word meaning, pronunciation, and examples. This reflects a tech-forward mindset, valuing digital immediacy and student-centred learning models over teacher-driven instruction. Second, Teachers 3 and 4 show a balanced perspective (blended learning view); they advocate for a blended learning model where AI complements, but does not replace, traditional methods. AI tools are seen as supportive aids that reinforce what is taught through face-to-face instruction. They emphasise the irreplaceable value of human interaction, real-time feedback, structured explanations, and contextualised practice. This theme aligns with constructivist and communicative language teaching theories, which prioritise social

interaction and guided scaffolding in learning. Finally, Teacher 5 shows rejection of full replacement (traditional-centred view); he clearly rejects the idea of replacing traditional methods with AI tools. The response emphasises the limitations of AI in addressing students' emotional and interactive needs and highlights the importance of classroom dynamics, discussion, teacher clarification, and contextualised instruction. This view reflects pedagogical scepticism regarding the current capabilities of AI to fully replicate or replace the human element in teaching.

In general, the responses indicates that while teachers demonstrate a willingness to integrate technology into vocabulary instruction, they adopt a cautious position concerning the full replacement of traditional pedagogical approaches. There is a common acknowledgement that artificial intelligence possesses the potential to enhance vocabulary acquisition; however, its current limitations prevent it from replicating the interactive, adaptive, and human-centred qualities characteristic of classroom-based instruction. As a result, the prevailing viewpoint advocates for a blended learning model in which AI serves as a complementary tool rather than an independent instructional method, thereby fostering both student autonomy and teacher-facilitated engagement.

Item 4. How can AI dictionaries be used to teach vocabulary? What specific criteria should be followed?

Table 14

Strategies and Criteria for Integrating AI Dictionaries in EFL Vocabulary Teaching

Interviewee	Strategies and Criteria for Integrating AI Dictionaries in EFL Vocabulary Teaching
1	Teaching vocabulary in context (e.g., examples,

	collocations, etc.).
2	No idea.
3	AI dictionaries can assist teachers in preparing their lessons and generating practice activities (e.g., quizzes, flashcards, and word games).
4	Provide example sentences for context, include pronunciation guides and synonyms, and encourage active use through writing and speaking.
5	Integrating AI dictionaries in SLA research can make vocabulary learning more active, engaging, and personalised. To use them effectively, teachers must evaluate their features, align them with the curriculum, and ensure student-centred ethical use.

The interviews' data exposes several key themes. First, contextual vocabulary presentation emerges as one of the most recurrent themes, as teachers note that AI dictionaries should include example sentences, common collocations, and real-life usage. Teachers 1 and 4 emphasise context-based vocabulary instruction and authentic input as essential criteria. This reflects a pedagogical alignment with contextual and communicative language learning approaches, where students engage meaningfully with words rather than in isolation. Second, support for lesson preparation and practice is acknowledged by some teachers who view AI

dictionaries not only as beneficial for students but also as valuable tools for teachers. These tools help design quizzes, flashcards, and interactive exercises, and generate contextual examples for lesson planning. Teacher 3 suggests using AI dictionaries to generate classroom practice materials. This theme reflects an increasing recognition of AI as a planning and resource-generation tool that enhances teaching efficiency and reduces preparation time. Third, multimodal and functional features are underlined, as teachers stress the need for AI dictionaries to offer pronunciation guides, synonyms and antonyms, and speaking and writing prompts. Teacher 4 highlights the importance of combining visual, auditory, and textual supports. These features contribute to multimodal learning, supporting different learning styles and improving lexical retention. Fourth, pedagogical alignment and ethical use are addressed by Teacher 5, who stresses the importance of curriculum alignment, student-centred application, and ethical considerations, such as avoiding over-reliance or misuse. This theme introduces a critical dimension, emphasising the importance of pedagogical intentionality and responsible AI integration in line with students' needs and institutional values. Finally, lack of knowledge or uncertainty is reported by Teacher 2, who expresses no awareness or guidance regarding how to use AI dictionaries in vocabulary teaching. This reveals a professional development gap among some instructors.

Item 5. What are the potential risks that may emerge from the implementation of AI technology in EFL classrooms?

Table 15

Potential Risks Associated with the Implementation of AI Technology in EFL Classrooms

Interviewee	Potential Risks Associated with the Implementation of AI Technology in EFL Classrooms

1	AI can deteriorate writing skills and undermine writing creativity.
2	No idea.
3	AI can affect training, class interaction, reliability, creativity, and critical thinking.
4	AI can reduce critical thinking and lead to misinterpretations.
5	AI can bringpedagogical, technical, ethical, and socio-cultural challenges. This includes curriculum design, teacher training, equitable access, student data, and classroom interaction.

Built upon the teachers' responses, the data reflects their awareness of the risks and potential challenges of AI-integration in the EFL classroom, in which they acknowledged some negative effects in the areas of writing, training, interaction, creativity, critical thinking, curriculum design, learning access, and student data. This result implies that integration could lead to serious instructional, technical, and ethical risks.

Item 6. To what extent can the use of AI dictionaries develop students' vocabulary acquisition and enhance the use of technology in EFL classrooms?

Table 16

The use of AI dictionaries develop students' vocabulary acquisition and enhance the use of technology in EFL classrooms

Interviewee	The use of AI dictionaries develop students' vocabulary acquisition and enhance the use of technology in EFL classrooms
1 ,3 and 4	To a very good extent**,** AI-assisted tools can track students' usage, proficiency, and progress, adapt to varying levels of difficulty, correct pronunciation, and promote engagement and interaction. AI-assisted tools can enhance word retention, interactive learning, and word use.
2 **5**	To a low extent To a moderate extent ,AI-assisted tools should be used to support learning, not to control it. AI-assisted tools can offer personalised, engaging, and contextual learning, but they cannot operate without teacher guidance, continuous evaluation, and classroom interaction.

The teachers' responses reveals an overall validation of the use of AI-technology to enhance EFL vocabulary instruction, indicating a solid understanding of its role in developing receptive and productive skills. This result suggests evolving professional development, teacher training, and pedagogical frameworks alongside technological innovations.

2.3 Discussion of the Findings

This study has been conducted among first-year EFL students at the University of Mohamed Khider in Biskra to investigate the different facets of AI dictionaries, shedding light on the integration of technology and AI tools in English language learning. It depends on two different tools to collect data from first-year students and EFL teachers: a quantitative questionnaire and a qualitative interview. In this sense, several core findings have emerged from the analysis of data, reflecting both students' and teachers' perceptionstowards the use of AI dictionaries in developing vocabulary acquisition. The following discussion section presents a detailed summary and discussion of the results gathered from the research tools:

Firstly, the questionnaire is conducted with 60 students from first-year population at the department of English, exploring demographic information and perceptionstowards vocabulary acquisition, technology-based learning, and AI integration in EFL classrooms. The results point to a significant overrepresentation of female students in first-year EFL classrooms, who symbolise youthfulness and motivation to learn English and engage with the language itself. Their motivation is translated into a good level of proficiency as they reflect a strong desire to master the receptive skills (e.g., listening, reading), suggesting a distinguished determination to master the English language. Regarding vocabulary, the finding pertains to the importance of vocabulary acquisition, as reflected by the majority of students. It highlights students' perceptions of vocabulary as a crucial skill for effective English communication. For

the best vocabulary learning strategy, students prefer listening, emphasising the importance of passive exposure to language and the role of auditory input in language development, particularly in early stages of acquisition. Additionally, they appear to rely on using various techniques to learn new words, including digital media like podcasts and audiobooks, reading books, and conversations, as well as traditional methods like writing, flashcards, and watching movies, demonstrating an adaptive approach. Following this, students show some struggle with word meaning in vocabulary learning, indicating a need for context-based learning and exposure to authentic language usage. In terms of AI use, the majority of them prefer AI dictionaries for their efficiency, clarity, and creativity, while the minority still prefer traditional dictionaries for accuracy, reliability, and authenticity. This evidence shows that AI-assisted tools like ChatGPT are recognised as effective lexical tools for vocabulary learning. This indicates a growing technological awareness and digital literacy among students. To sum up, the results reveal that first-year EFL students at Mohamed Khider University have a positive perception towards technology-assisted learning. They prefer receptive vocabulary strategies, particularly listening, and the use of AI dictionaries. However, some still value traditional learning tools, suggesting the need for blended learning approaches.

Secondly, the teachers' interview is conducted with five EFL teachers at the Department of English, exploring vocabulary teaching practices, challenges, and potentials in EFL classrooms. In essence, the findings show that teachers have varied degrees and professional experiences, providing insights into their qualifications, perceptions of students' proficiency, vocabulary teaching strategies, and perceptionstowards technology integration in English language instruction. Initially, their high qualification allows them to significantly evaluate their students' level of proficiency, ranging between average and good, which indicates a persistent difficulty in language development skills and a need for structured instruction

aiming to enhance their receptive and productive skills. When it comes to the objectives of vocabulary teaching, teachers view that this situation entails a holistic approach which serves and caters to the students' diverse learning needs, styles, and obstacles, suggesting the integration of vocabulary teaching with other skills like listening, speaking, reading, and writing. This may help establish a solid foundation for effective communication and cognitive development. The latter significantly aligns with current second language acquisition trends for meaningful input and retention. Thus, teachers' theoretical understanding of vocabulary acquisition varies, with some having strong knowledge but lacking deeper understanding of lexicology. In response to vocabulary teaching challenges, the teachers report that factors like motivation, low proficiency, and limited engagement can hamper the teaching process. To address these, they suggest employing various strategies as contextual learning, reading, games, and technology use. Genre-based approaches, word mapping, and flashcards are also recommended. Regarding AI-technology integration, teachers find it a promising trend as long as it is used within educational, pedagogical, and ethical criteria. They believe AI-dictionaries can enhance vocabulary instruction by offering a multiple means of engagement, accessibility, and personalisation. However, they also express concerns about potential risks, such as reduced creativity, limited interaction, curriculum misalignment, and data privacy issues. This finding suggests that, while technology and AI-assisted tools are increasingly demanded in vocabulary instruction, their adoption should be balanced with pedagogical objectives and ethical considerations. This may lead to optimising vocabulary teaching and learning in EFL classrooms.

The analysis of the questionnaire and the interview emphasises the use of AI-dictionaries in developing vocabulary acquisition. Delving into the meaning and relevance of the results

helps interpret the research data and contextualise the results, structured around the research questions.

Conclusion

This chapter tackles the ongoing social research discussions and debates, including key definitions, concepts, and theories. It provides a brief overview of the methodology, discussing the research approach, design, setting, population, sampling, data collection instruments, methods of analysis, and limitations. Additionally, it presents the research findings and results by offering a deep analysis of the questionnaire and interview. The results of the students' questionnaire are displayed in pie charts, representing percentages and frequencies. However, the teachers' interviews are analysed qualitatively through thematic analysis. In the end, a comprehensive discussion and interpretation of the findings has been established, drawing on conclusions about the relationship between the research variables.

GENERAL CONCLUSION

General Conclusion

It is of vital importance to say that vocabulary knowledge is recognised as an integral element for second and foreign language acquisition and comprehension. Vocabulary is the centrepiece of spoken and written communication, and without it, nothing can be conveyed. It plays a major role in enhancing the overall learning and acquisition process through shaping the structures of the four language development skills: listening, speaking, reading, and writing. One common way to support vocabulary development amongst EFL students is to encourage technology-enhanced learning tools, exploring their linguistic and pedagogical implications in the class. This study aims to investigate the impact of AI dictionaries on EFL students' vocabulary acquisition in light of students' and teachers' perceptions. To reach this aim, first-year EFL students and teachers at the University of Mohamed Khider, Department of English, are surveyed using a questionnaire and an interview, employing a mixed-methods approach. Gathering insights and perceptionsfrom the research participants contributes to a deeper understanding of the relationship between the research variables.

To answer the research questions, this studyreveal significant trends in vocabulary acquisition, technological adaptation, and AI integration among the first-year population. It shows that vocabulary acquisition is seen as a key learning goal, with students recognising its importance in effective communication. The results also reveal that students face different challenges in understanding word meanings, which require context-based vocabulary instruction, corpus-informed learning, and real-world text integration. AI-based tools like ChatGPT are preferred for their immediacy, creativity, and user-friendliness, while a minority still prefer conventional dictionaries for reliability and authenticity. This highlights the need for blended learning environments that integrate the strengths of both methodologies. This

suggests that first-year EFL students at Mohamed Khider University exhibit a forward-looking and strategic approach to language learning. They demonstrate a strong preference for receptive strategies and positive perceptionstowards AI integration. These findings call for pedagogical models that incorporate technological advancements while maintaining the pedagogical integrity of traditional methods.

Additionally, the results from the teachers' interview indicate general positive perceptionsregarding the impact of AI technology on vocabulary acquisition. They show varied experiences and qualifications among EFL teachers at the Department of English, University of Mohamed Khider. The teachers generally advocate a holistic approach to vocabulary teaching, integrating it with other language skills. However, they demonstrate varying theoretical understanding of vocabulary acquisition, identifying challenges such as student motivation and proficiency. In light of this, they suggest various strategies like contextual learning, games, and technology. While viewing AI as promising, concerns regarding reduced creativity, ethical issues, and data privacy are raised, emphasizing the need for balanced technological integration in vocabulary instruction.

In conclusion, EFL students and teachers at the Department of English, University of Mohamed Khider, show positive perceptionstowards the use of AI dictionaries in enhancing vocabulary acquisition, identifying a significant impact. This conclusion could imply several recommendations and future implications.

Recommendations and Future Implications

Given the above findings, several implications and recommendations emerge for EFL practitioners, curriculum designers, and educational policymakers regarding the integration of AI dictionaries in vocabulary acquisition. This study suggests that:

Recommendations:

1) Develop vocabulary learning materials that integrate traditional teaching methods with AI tools for a balanced and practical instructional approach.

2) Encourage teachers to incorporate AI-powered dictionaries like ChatGPT, DeepL, or Oxford's tools into classroom instruction for real-time, context-rich definitions and usage examples.

3) Encourage students to use AI dictionaries to explore words in authentic contexts, such as news articles or dialogues, to enhance their inference and usage skills.

4) Enhance the use of AI-assisted to create personalised vocabulary lists, quizzes, and feedback based on individual student proficiency levels and learning styles.

5) Encourage the assessment of AI tools' efficacy in improving vocabulary learning through classroom observations, student feedback, and performance data to guide future enhancements.

Implications:

1) AI dictionaries are context-based tools, so teachers should apply them to enhance understanding, encourage student autonomy, modernise vocabulary instruction, and align with students' technological preferences.

2) Students prefer receptive vocabulary learning strategies, so EFL curricula should incorporate AI tools for context-based exposure, including adaptive vocabulary explanations.

3) AI dictionaries are effective, but over-reliance can hinder critical thinking and creativity. Thus, educators should balance technology with traditional strategies like dictionary skills training and context-based guessing.

4) Blended learning models are practical, so combining AI methods with traditional ones can bring tremendous results.

5) Both teachers and students have ethical concerns about data privacy. This emphasises the urge to choose AI tools that comply with data protection laws and educate users about responsible AI usage.

6) Future research should explore the long-term effects of AI dictionaries on vocabulary retention, language proficiency, and cognitive and metacognitive learning processes.

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APPENDICES

Appendix A

Students' Questionnaire

Dear student,

As part of an *Applied Linguistics* Master's dissertation, this questionnaire investigates the impact of AI dictionaries on EFL students' vocabulary acquisition. Thus, it aims to explore first-year EFL students' attitudes towards the topic under investigation.

All responses will be kept confidential, and the results obtained will help us throughout the conduction of this study.

We will be grateful for your participation in filling in this questionnaire.

Thank you in advance.

Section One : Demographic Information

Q1: Gender:

    A. Female

    B. Male

Q2: Age:

Q3: Level of English proficiency:

    A. Very good

    B. Good

    C. Average

    D. Bad

    E. Very bad

Q4: I prefer learning vocabulary through:

    A. Listening

    B. Speaking

C. Reading

D. Writing

Section Two: EFL Students' PerceptionsTowards Vocabulary Acquisition in Second/ Foreign Language

Q1: Do you agree that vocabulary is the centrepiece of the language repertoire?

    A. Strongly agree

    B. Agree

    C. Neutral

    D. Disagree

    E. Strongly disagree

Q2: Do you think vocabulary is needed for good communication skills in English?

    A. Yes

    B. No

    C. I have no idea

Q3: How often do you understand what is communicated inside the classroom?

    A. Always

    B. Often

    C. Sometimes

    D. Rarely

    E. Never

Q4: What is your take on the importance of learning new words?

    A. Very unimportant

    B. Unimportant

    C. Neutral

    D. Important

    E. Very important

Q5: How do you learn new words?

    A. Reading books

    B. Listening to podcasts or audiobooks

    C. Engaging in conversations

    D. Playing games

    E. Using the dictionary

    F. Other…………………………………………………………………………

Q6: What is the most difficult aspect of learning new words?

    A. Word use

    B. Word form

    C. Word meaning

Q7: What do you think is most important for achieving language proficiency?

    A. Vocabulary acquisition

    B. Vocabulary knowledge

    C. Vocabulary retention

Q8: What do you think can hinder the process of acquiring new vocabulary?

    A. Lack of grammar

    B. Poor memorisation

    C. Low-motivation

    D. Lack of practice

    E. Other…………………………………………………………………………

Q9: Do you think you have sufficient vocabulary knowledge to use in spoken and written communication?

    A. Yes

    B. No

    C. I have no idea

Q10: What is your favourite vocabulary learning strategy, and why?

…………………………………………………………………………………………………

…………………………………………………………………………………………………

Section Three: EFL Students' PerceptionsTowards Artificial Intelligence, Vocabulary, and Dictionary Use

Q1: Do you prefer AI dictionaries over traditional dictionaries in learning vocabulary?

    A. Yes

    B. No

    C. I have not thought about that

Justify your answer in a few words, please.

…………………………………………………………………………………………………

Q2: Do you use AI-powered tools such as dictionaries, mobile apps, or games to learn new vocabulary?

    A. Yes

    B. No

    C. I have never thought about that

Q3: If yes, which AI tools do you often use for vocabulary learning?

    A. Google Translate

    B. ChatGPT

    C. Duolingo

    D. AI-powered dictionaries (e.g., Oxford Dictionary/ Cambridge Dictionary)

    E. Other……………………………………………………………………………………

Q4: What features of AI dictionaries do you find most useful for vocabulary acquisition?

    A. Word definitions

    B. Word affixes (prefix/suffix)

    C. Synonyms and antonyms

    D. Collocations

E. Audio pronunciation

Q5: How can AI dictionaries increase the level of vocabulary acquisition? By increasing:

A. Recognition
B. Retention
C. Concentration
D. Motivation
E. Other…………………………………………………………………………………

Q6: What are the pros and cons of using AI-powered dictionaries for vocabulary acquisition?

Pros:………………………………………………………………………...........................

Cons:…………………………………………………………………………………………

Q7: The good use of AI-powered dictionaries allows you to better:

A. Comprehend high-frequency words
B. Memorise new words
C. Guess the meaning of words
D. Improve written vocabulary and build language accuracy
E. Improve spoken vocabulary and build language fluency
F. Other………………………………………………………………………………….

Q8: AI dictionaries can help students improve their vocabulary, addressing their knowledge, word range, and language skills—do you agree?

A. Strongly agree
B. Agree
C. Neutral
D. Disagree
E. Strongly disagree

Q9: How do you assess the experience of learning vocabulary through the use of AI dictionary?

A. Very unsatisfied
B. Unsatisfied
C. Neutral

D. Satisfied

E. Very satisfied

Q10: Do you think incorporating AI into your EFL classroom to teach vocabulary would be beneficial?

A. Very much so

B. Somehow

C. I am not sure

D. Not at all

Appendix B

Teachers' Interview

This interview is part of a Master's dissertation in *Applied Linguistics* about investigating the impact of AI dictionary on EFL students' vocabulary acquisition. Thus, this interview aims to explore the perspectives of EFL teachers at the department of English, University of Mohamed Kheider towards the topic under investigation. The interview may last 15 to 30 minutes to get the necessary information from the interviewees, while the responses will be written down and promised to be kept anonymous and confidential to the research study.

Your most appreciated contribution will make a huge difference in the results of our study

Thank you in advance

Engagement Questions: General Knowledge

Q1: What degree do you hold?

Q2: How long have you been teaching English at the University of Mohamed Khider?

Q3: Have you taught first-year before or is it your first time?

Q4: How is first-year students' level of English proficiency?

Exploration Questions: PerceptionsTowards Teaching Vocabulary in EFL Classrooms

Q1: What do you teach vocabulary for?

Q2: What distinguishes vocabulary learning, acquisition, and retention?

Q3: To what extent is teaching vocabulary important for good communications skills in English?

Q4: Do you find teaching vocabulary to freshmen students a kind of a challenging task? If yes, what sort of difficulties do you often encounter?

Q5: Vocabulary can be taught using several strategies and methods. What kind of strategies or methods do you use in teaching vocabulary to first-year students?

Q6: What areas of research in second and foreign language vocabulary have implications for English language teaching?

Exist Questions: PerceptionsTowards Technology-Integration in EFL Classrooms to Teach Vocabulary

Q1: The integration of technology in the EFL classroom has gained momentum among second and foreign language researchers. Do you find it even useful for teaching vocabulary?

Q2: What sort of technology tools and devices do you use to teach vocabulary to first-year students?

Q3: Can you replace traditional teaching methods with modern teaching methods, such as the use of AI-powered dictionaries to teach vocabulary to first-year students?

Q4: How can AI dictionaries be used to teach vocabulary? What specific criteria should be followed?

Q4: What are the potential challenges that may rise from the implementation of AI technology in EFL classrooms?

Q6: To what extent can the use of AI dictionaries develop students' vocabulary acquisition and enhance the use of technology in EFL classrooms?

الملخص

تعتبر المفردات عملية معرفية معقدة وعنصر أساسي لتعلم واكتساب اللغة الأجنبية. اذ يعد تطبيق الأساليب المعززة بالتكنولوجيا في علم المعاجم أحد الادعاءات الراسخة لدعم اكتساب المفردات بين متعلمي اللغات الأجنبية. ان الغرض الأساسي من هذه الدراسة هو توثيق تأثير قواميس الذكاء الاصطناعي على اكتساب المفردات. وتشمل الدراسة طلاب واساتذة السنة الأولى الإنجليزية بقسم اللغة الإنجليزية بجامعة محمد خضر بسكرة. حيث اعتمدت هذه الدراسة تصميما استكشافيًا ومنهجا هجينا . حيث تطلب ذلك استخدام أداتين هما استبيان للطالبة ومقابلة للاساتذة. وبناء على ذلك، تم استخدام طريقتين مختلفتين للتحليل: التحليل الكمي باستخدام برنامج (SPSS (V.26 والتحليل النوعي باستخدام تحليل المحتوى.إذ أظهرت النتائج وجود علاقة إيجابية بين استخدام قواميس الذكاء الاصطناعي وزيادة اكتساب المفردات، حيث أظهر طلاب و أساتذة اللغة الإنجليزية كلغة أجنبية وجهات نظر إيجابية عامة. وتوصي النتائج أيضًا بدمج الأدوات المدعومة بالذكاء الاصطناعي في الفصول الدراسية للغة الإنجليزية كلغة أجنبية لتعزيز تعليمها.

الكلمات المفتاحية: اكتساب المفردات ، قواميس الذكاء الاصطناعي، مواقف الأساتذة و الطلبة