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DEPARTMENT OF ENGLISH

Exploring the Role of ChatGPT in Mobile-Assisted Language Learning (MALL) for Enhancing Productive Vocabulary Use among Third-Year EFL Students at Biskra University:

The Case of third-year Students of English at Mohamed Khider University of Biskra

Thesis submitted to the Department of Letters and Foreign Languages in partial fulfillment of the requirements for the Degree of **Master** in **Sciences of Language**

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Declaration

I, Adouani Wissal solemnly declare that the present master's dissertation entitled "Exploring the Role of ChatGPT in Mobile-Assisted Language Learning (MALL) for Enhancing Productive Vocabulary Use among Third-Year EFL Students at Biskra University" is my own work and has not been submitted for the attainment of any academic degree or diplomat at any other university or institution. All material quoted, paraphrased, and summarized has been appropriately acknowledged and cited in accordance with the academic standards.

This research was carried out and completed at Mohamed Khider University, Biskra, Algeria.

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Dedication

This work is dedicated to my family, who have shown love, support, and encouragement.

To my mother for her endless belief

To my father for his support

To my siblings Rania, Lama, Dhia, and Abd-El Hai for being there in the ups and downs

And to my friends, Hadjer, Meriem, and Nesrine, who never doubt in my potential

This piece is a tribute to all who continued to have faith in my abilities.

Acknowledgements

"We write to taste life twice, in the moment and in retrospect."

Anaïs Nin

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Finally, I extend my appreciation to everyone who has placed their trust in me and inspired me to strive for excellence.

Abstract

This study explores the role played by ChatGPT, an artificial intelligence-based language model, in aiding productive vocabulary development among English as a Foreign Language (EFL) students in their third year at Mohamed Khider University of Biskra. Within an interpretivist approach, this qualitative practice-based case study aims to investigate how students use ChatGPT when undertaking speaking and writing exercises in class as part of Mobile-Assisted Language Learning (MALL) activities. Data collection was conducted through open-ended questionnaires and vocabulary exercises within real learning scenarios. Thematic analysis conducted using MAXQDA24 revealed that students perceived ChatGPT as an effective resource that instilled confidence in vocabulary use, accuracy in selecting words, and increased motivation for applying vocabulary. The personalized and contextualized feedback offered by the resource was specifically seen as useful in supporting vocabulary progression in writing and speaking academic discourse alike. This notwithstanding, potential issues were identified as well, including an excess confidence in trusting AI-based recommendations, lack of critical evaluation of vocabulary output, and periodic irrelevance in relation to local cultures and contexts. The study concludes that, when introduced carefully into pedagogical designs, ChatGPT has significant potential in supporting productive vocabulary development in EFL learning settings. These findings have significant implications for AI-facilitated instruction design development, learner preparedness for AI literacy, and further research into technology-enabled vocabulary development within applied linguistics.

Key words: ChatGPT, Mobile-Assisted Language Learning (MALL), productive vocabulary, EFL, case study, artificial intelligence, qualitative research, classroom-based instruction

List of acronyms

EFL: English as a Foreign Language

MALL: mobile-assisted language learning

SLA: second language acquisition

IH: input hypothesis

CS: caretaker speech

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General introduction

1. Background of the study

This research investigates the emerging discipline of AI-facilitated language learning, considering the launch and increased integration of ChatGPT into the design and delivery of inside and outside-class language learning activities. The study seeks to ascertain the value-added contribution of such AI to the learning process, notably in the case of Mobile-Assisted Language Learning (MALL). The research focus is on how such AI technologies as embedded into mobile devices can potentially provide English as a Foreign Language (EFL) learners space to learn vocabulary via interactive, immediate, context-sensitive in class practice. Viewing the increasing phenomenon of AI utilization within education, the study identifies a need for examining the utility of AI tools in enhancing students' productive vocabulary, understood as the active use of vocabulary for both spoken and written communication, especially in the Algerian EFL classroom context.

Therefore, the aim of the current research is to investigate the efficiency of ChatGPT, as implemented in MALL environments, to promote the acquisition and utilization of productive vocabulary for third-year EFL learners. The study aims to ascertain to what extent this AI-based tool can promote learners' attainment to actively use learned vocabulary appropriately in communication tasks, and thus promote better understanding of AI's contribution to the learning achievement of a language within an EFL educational and cultural context. The study aims to offer an understanding of the possible benefits as well as limitations of utilizing AI in MALL environments to promote the acquisition of productive vocabulary, with the aim of offering valuable insights for pedagogy as well as curriculum development in the Algerian higher education institutions.

2. Statement of the problem

Vocabulary acquisition continues to be the focal point of second and foreign language learning because it grants learners the ability to know and use language effectively. Part of such vocabulary knowledge is the ability to actively use words in writing and speech, or productive vocabulary, which is particularly crucial to the development of communicative competence. English as a Foreign Language (EFL) learners, however, usually require a lot of time to transition from receptive knowledge (word recognition) to actual usage, largely because of instruction that emphasizes rote memorization, learning lists of context-free words or repetitive exercises that lack engagement with meaning. Such conventional practices work well for recognition and recitation but generally fail to construct spontaneous, contextually anticipated language use. Recent times have seen technology-enhanced learning, especially through Mobile-Assisted Language Learning (MALL), to address the limitations of conventional vocabulary learning. Learners are now able to receive input, along with practice, anywhere and at any time via mobile technologies, promoting learner autonomy, individualization,

and flexibility. Furthermore, incorporation of Artificial Intelligence (AI) tools—recently ChatGPT—within MALL environments introduces an innovation to the future of language learning. ChatGPT offers immediate, interactive, context-related, feedback, reflecting actual-life conversation and likely to boost vocabulary output. These support second language acquisition theories like the Input Hypothesis, Interaction Hypothesis, and Output Hypothesis, emphasizing the requirement of understandable input, significant interaction, and active usage of the target language for acquisition. While AI-powered applications are becoming more common to learn languages globally, there is limited empirical research into the direct input of AI applications to learning productive vocabulary, even less so within the Algerian EFL context. While some studies have examined the use of ChatGPT to acquire vocabulary globally, this has typically focused on receptive knowledge, overall usage, or motivation, without much consideration for how it can be harnessed to encourage productive usage. Furthermore, students' attitudes and use of ChatGPT have never been systematically examined within authentic, mobile-based learning contexts.

This study, therefore, seeks to fill an important gap in the existing literature by exploring third-year EFL students' learning experience and attitudes toward the use of ChatGPT as an adjunct to MALL to improve their productive vocabulary at Biskra University. This qualitative study seeks to uncover the dynamics of learner engagement with ChatGPT, the feedback received, and the effects this has on both oral and written production. The study seeks to provide insights into how AI-can support mobile learning practice as well as educational decision-making within EFL contexts where digitalization is still at an early stage.

3. Research questions

This research seeks to answer the following questions:

RQ1: How do third-year EFL students at Biskra University experience and interpret the use of ChatGPT as a Mobile-Assisted Language Learning (MALL) tool for enhancing their productive vocabulary?

RQ2: In what ways does ChatGPT support or limit learners' ethical use of productive vocabulary in oral and written language tasks?

RQ3: How do students perceive the effectiveness and relevance of ChatGPT use in fostering their productive vocabulary development?

4. Research aims

This study aims to explore the application of ChatGPT as a MALL to cultivate productive vocabulary among third-year Biskra University EFL students. It aims to:

1. Examine the ways through which ChatGPT facilitates the creation of topic-related and academia-friendly terminologies in writers and speakers.
2. ChatGPT affects the coherence and structure of the work of the students as well as its persuasiveness.
3. Study the attitudes of learners towards the contribution of ChatGPT in fostering fluency, lexical variation, and confidence and determine AI-based learning constraints.

4. Research methodology

This is qualitative exploratory case study research within the interpretivist paradigm, concerned with the way individuals experience and make sense of an experience in specific contexts. It seeks to find learners' individual meanings of utilizing ChatGPT as an instrument of productive vocabulary learning, as opposed to making population generalizations.

Following an interpretivist qualitative case study approach, this research is essentially *practice-focused*, i.e., fieldwork was mainly guided by a focus on specific classroom-based productive language use (see Tigane, 2021), particularly EFL learners' engagement in ChatGPT-supported speaking and writing in-class tasks. This study typically utilizes qualitative methods to receive rich, detailed, and descriptive accounts of third-year EFL students' utilization of and attitude towards ChatGPT within the context of Mobile-Assisted Language Learning (MALL). Qualitative methodology is best suited to represent the voices of learners through their individual experiences to bring forth themes related to ethical engagement with AI, embedded language use, perception of feedback, as well as individual learning pathways.

5. Data collection:

The two primary data-collection instruments used within this research are:

5.1 Productive Vocabulary Test (Writing and Speaking):

For the purpose of determining the students' actual usage of vocabulary, the two-part productive vocabulary test will be given to the participants, including:

- A writing activity where students have to compose a short paragraph or essay with target vocabulary used appropriately, effectively, and contextually.
- Speaking task, where students react to an oral prompt or complete a genuine communicative task, to measure spontaneous use of vocabulary as well as accurate use.

They are framed not so much to test word knowledge but to explore the extent of the learners' productive usage of vocabulary at both the written and spoken tasks. They provide concrete evidence of vocabulary usage in the process of communicating and the potential influence that exposure to ChatGPT has brought about on such development.

5.2 Questionnaire:

A qualitative open-ended survey was utilized to collect students' own accounts of learning vocabulary using ChatGPT within an MALL setting. The survey includes questions such as:

- Frequency of usage of ChatGPT.
- Perceived benefits of utilizing ChatGPT to learn vocabulary:
- Perceived limitations of utilizing ChatGPT
- Perceptions of feedback quality and vocabulary given by ChatGPT as culturally acceptable.
- Autonomy, motivation, and confidence in engaging with vocabulary via ChatGPT.

The openness of the questionnaire allows students to provide accounts using their own words, allowing the researcher to identify emerging patterns of recurrences and themes. Together, the qualitative questionnaire and writing/speaking task are believed to give a comprehensive snapshot of both learners' performance-based results and individual experience, complementing the exploratory and interpretive purposes of the present research.

5.3 Population, sampling, and sampling technique

The target participants for this study are third-year students in the English Department, Mohamed Khider University of Biskra. They are potentially at an advanced level of English proficiency at this stage and are potentially familiar with an array of mobile tools, including AI tools such as ChatGPT. The study will apply purposive sampling, one of the non-probability sampling techniques common in qualitative studies, to sample participants according to pre-determined characteristics with regard to research aims. The inclusion requirements for the current study are:

- Students who have utilized ChatGPT once or more for learning activities related to schoolwork or vocabulary.
- Students who are willing to talk about their experience of using the tool both in mobile or school settings.

A sample size of 12 participants will be recruited. The sample is considered sufficient to achieve data saturation, the point at which no additional themes or data are given by ongoing data generation. The small sample size is more likely to allow depth of analysis to be achieved, along with the giving of rich accounts of participant experience.

6. The significance of the study

This study has theoretical as well as practical applications to the fields of Educational Technology, Applied Linguistics, and Mobile-Assisted Language Learning. In North African EFL learning, there is little empirical research on the use of AI tools for learning. The current study fills this regional gap by charting learners' lived experience of ChatGPT so as to contribute local testimony to global debate on AI in the higher education context. The study responds to an overall theoretical gap by exploring the learning of productive vocabulary, an issue that has been relatively less explored in studies of AI-assisted language learning.

7. Ethical consideration

The study was conducted with an ethical awareness of safeguarding and anonymizing participants. Data collection tools were prefaced with sections informing participants of the study aims and procedures, ensuring confidentiality and voluntary involvement. Furthermore, it was explicitly stated to dataset participants that findings may be published as part of the dissertation and may be disseminated via the university's online data repository.

Theoretical part

Chapter One: Introduction to Vocabulary Acquisition Theories and Technology in the EFL Context

Introduction

Vocabulary acquisition is one of the essentials in learning a second language, especially for English foreign language (EFL) students. Another crucial aspect of vocabulary knowledge is productive vocabulary, which is the ability to actively use words in speaking and in writing as well. Assuming this skill as a key for language proficiency (Laufer,1998). The capacity to generate as much as possible of an accurate and appropriate vocabulary is crucial for academic English, where complexity and accuracy enhance, in general, the communication skills (Webb, 2005). At the same time, improving productive vocabulary proceeds to be a complication for EFL learners, which entails the need to explore innovative teaching and learning methods.

As technology develops, mobile-assisted language learning (MALL) has appeared as a promising approach to corroborate vocabulary acquisition. MALL incorporates mobile technologies like smartphones, tablets, and digital apps into language education, offering a pliable, contextualized, and interactive experience (Burston, 2014). Research has shown that mobile-based applications give learners chances to improve receptive and productive vocabulary proficiency by facilitating the way for learners to engage in individualized and contextualized learning experiences (Li & Hafner,2021). In addition, metacognitive strategies in mobile-assisted language learning, for instance self-regulated learning and reflection on vocabulary use, proved to improve learners' retentiveness and implementation of new vocabulary (Wang et al., 2024). One of the last innovations in MALL is the inclusion of AI-driven large language models such as ChatGPT. This AI-generative tool offers learners the capacity to experience interactive feedback, adaptive learning experiences, and opportunities to drill vocabulary in real-world settings (Lo et al., 2024)

The first part of this literature review presents a general view of vocabulary acquisition and its theories in SLA, mobile-assisted language learning (MALL). In addition, it discusses the relationship between artificial intelligence and vocabulary learning and its relation to the EFL context. The second part will mainly be reviewing previous research while discussing main themes empirically from productive vocabulary development, MALL for vocabulary retention, Chat GPT as an AI tool for vocabulary acquisition, and finally, leveraging Chat GPT for vocabulary development through writing and speaking.

1. Definition of vocabulary acquisition:

Vocabulary acquisition relates to the way in which learners adopt and increase their lexical proficiencies in a second language. According to Nation (2001), it includes acknowledging,

perceiving, and using words in different settings; vocabulary learning encircles three main aspects (phonology, orthography, and morphology), meaning (semantic properties and associations), and use (grammatical functions and collocations). An efficient vocabulary acquisition thus compels not only exposure to new words but also frequent engagement and meaningful interaction using these terms.

1.1 types of vocabulary acquisition:

The classification of vocabulary acquisition in SLA varies based on mode, context, and cognitive processes:

1.1.1 Incidental vs. Intentional:

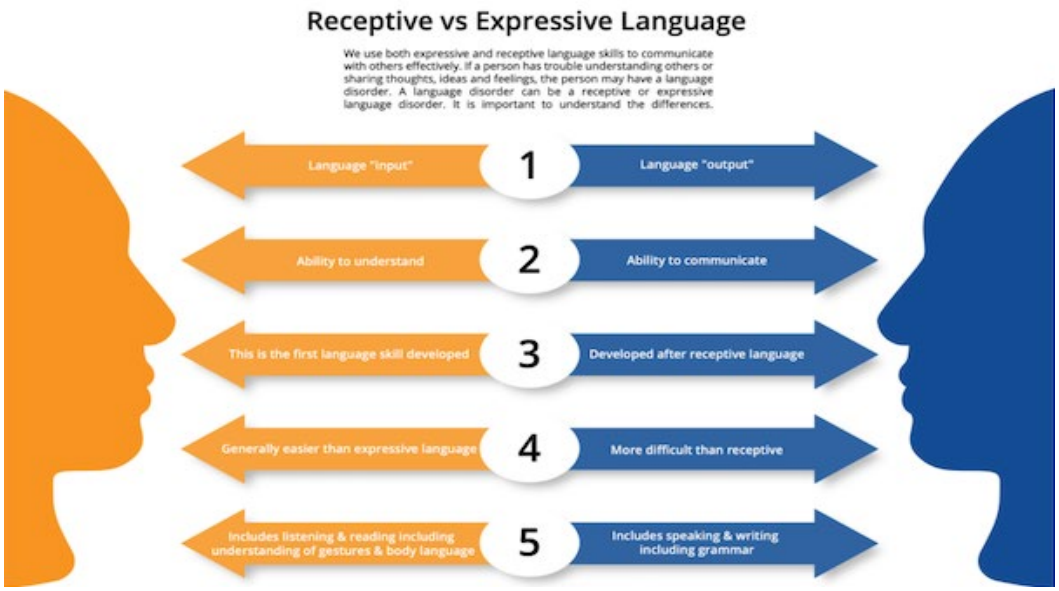
Second language vocabulary acquisition is generally classified in terms of mode of learning, context of exposure, and the psychological processes. Intentional and incidental learning are two broad categories**.** Incidental learning happens when learners obtain words unintentionally through engaging in language activities, including reading, listening, or watching media. It is normally associated with immense exposure to language input, where learners generate new words in meaningful contexts without direct attention to memorization (Nation, 2005), whereas intentional learning implies a deliberate effort to remember and study new lexis through apparent instructions, vocabulary exercises, and targeted practices. Laufer and Hulstijn (2001) indicate that incidental learning often leads to better long-term retention due to contextual reinforcement, mainly for academic or technical lexicon.

1.1.2 Receptive and productive vocabulary:

Receptive vocabulary covers words that learners perceive when encountered in speech or text. As Schmitt (2014) explains, "receptive knowledge is sometimes characterized as the capacity to comprehend words when listening and reading" (p. 3). Simply, it is the ability to comprehend language that's being presented, rather than producing it (like speaking or writing). It consists of listening and reading vocabulary, permitting learners to understand input without needing language processing. However, one may not manage to apply it actively in the other hand, productive vocabulary or (expressive vocabulary) refers to the capacity of learners to effectively use words in both oral and written communication. This ability reflects a higher level of mastery in the language (Nation, 2005). Webb (2005) emphasizes that "productive vocabulary should be viewed as an active word system... to express thoughts and emotions". This shows the importance of gaining productive vocabulary that allows learners to actively communicate their ideas instead of merely recognizing words.

Figure 1

Receptive vs Productive (Expressive) Language



Note. from understanding receptive vs. Expressive language for improved communication and language disorders, by the connecting link, n.d. (https://www.connectinglink.com/receptive vs expressive language). Copyright by the connecting link.

In general, receptive vocabulary is larger than productive vocabulary, considering that learners sometimes acknowledge more words than they can remember and use naturally. The shift from receptive to productive vocabulary necessitates frequent exposure, meaningful use, and explicit reinforcement. Laufer & Hulstijn (2001) indicate that engaging through output-oriented activities, for instance, writing summaries or speaking tasks, is helpful for students to effectively transform receptive vocabulary to productive vocabulary. To distinguish between these two types of vocabulary, researchers can establish methods that help comprehension and active language use, insisting on a balanced approach to vocabulary acquisition.

1.2 Theories of vocabulary acquisition in SLA:

Vocabulary acquisition is an essential element for second language acquisition (SLA) and has also been studied in applied linguistics. Researchers have explored quite a few theories and applied several models to understand how learners acquire, process, and maintain vocabulary. What follows presents three impactful theories in SLA: Nation's model of vocabulary learning, Laufer's involvement load hypothesis, and Swain's output hypothesis. These theories impose insightful mechanisms focusing on vocabulary acquisition, emphasizing cognitive engagement, language production, and systematic learning of lexical items.

1.2.1 Nation's model of vocabulary learning:

Nation's model (2005) of vocabulary learning prioritizes a structured approach that provides frequency, strategies, and balanced techniques to improve vocabulary acquisition. The main points of this model involve:

Frequency Distribution: stresses that high-frequency words should be primary as they constitute a substantial part of language use.

Vocabulary Knowledge Dimensions: Nation (2005) provided a comprehensible framework for vocabulary learning, classifying lexical knowledge into three areas:

- **Form:** involves spoken form(pronunciation), written form(spelling), and word parts (morphology) .
- **Meaning**: contains the core meaning of words, their relationships, and semantic structures.
- **Use:** related to the syntactic and collocational patterns in which a word appears.

Figure 2

The components of vocabulary knowledge

Form	spoken	R	What does the word sound like?
		P	How is the word pronounced?
	written	R	What does the word look like?
		P	How is the word written and spelled?
	word parts	R	What parts are recognizable in this word?
		P	What word parts are needed to express the meaning?
Meaning	form and meaning	R	What meaning does this word form signal?
		P	What word form can be used to express this meaning?
	concept and referents	R	What is included in the concept?
		P	What items can the concept refer to?
	associations	R	What other words does this make us think of?
		P	What other words could we use instead of this one?
Use	grammatical functions	R	In what patterns does the word occur?
		P	In what patterns must we use this word?
	collocations	R	What words or types of words occur with this one?
		P	What words or types of words must we use with this one?
	constraints on use	R	Where, when, and how often would we expect to meet this word?
	(register, frequency, etc.)	P	Where, when, and how often can we use this word?

Note. The vocabulary knowledge dimensions by Nation (2013). The **R = receptive knowledge, P = productive** knowledge.

Strategic Learning: Guidance should pay attention to effective strategies such as context guessing, analysis of word parts, and proper dictionary use.

Reasonable Teaching Techniques: A comprehensive curriculum should include meaning-focused input, language-focused learning, meaning-focused output, and fluency development.

Assessment Methods:
Different testing tools, like the Vocabulary Levels Test, should be used to diagnose learners' vocabulary comprehension across distinct frequency levels. This model underscores the cruciality of a diverse approach to vocabulary learning. It endeavors to structure learners' proficiency and boost confidence by employing the language.

1.2.2 The Involvement Load Hypothesis:

Laufer and Hulstijn (2001) presented the involvement load hypothesis, which assumes that vocabulary retentiveness is affected by the cognitive effort (or involvement load) needed for a given task. This hypothesis determines three essential elements that affect new word learning:

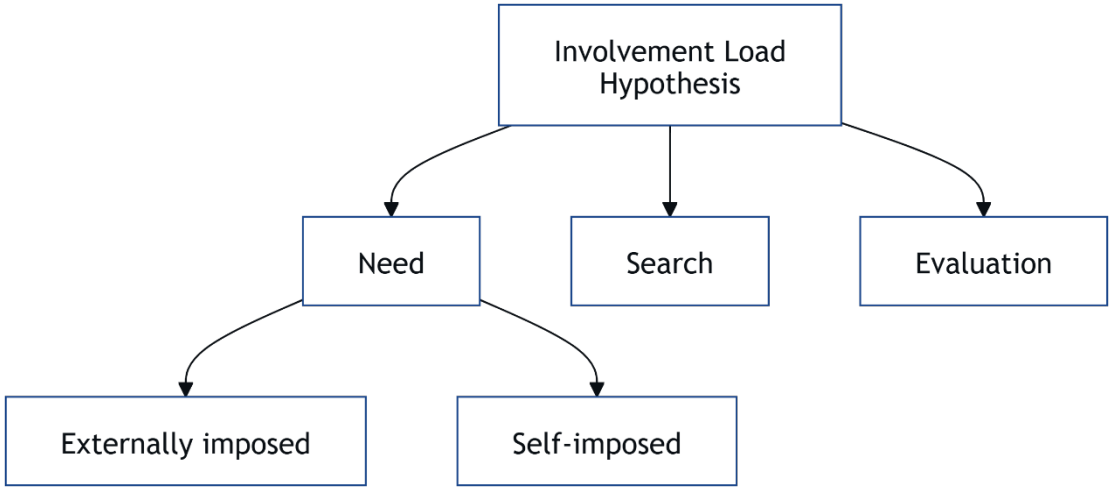
Need: This concept refers to the need for a learner to acquire a certain word, which can be either eternally imposed (e.g., by a teacher, an exam requirement, or task instructions) or self-imposed (e.g., personal interest or communication necessity).

Search: the attempt to seek the significance or pattern of a word.

Evaluation: is the juxtaposition of newly learned words with current knowledge and integration into meaningful use. Tasks that require a higher involvement load, for example, writing sentences using new vocabulary, lead to greater retention compared to tasks demanding a minimal cognitive engagement.

Figure 3

The visual representation of the involvement hypothesis, Laufer and Hulstijn (2001).



Note. Adapted from the involvement hypothesis presented by Laufer and Hulstijn (2001). The figure was designed by the author for illustrative purposes.

1.2.3 The output hypothesis:

Swain (1993) introduced the output hypothesis, which highlights the importance of language production in vocabulary acquisition. The hypothesis points out that a comprehensible output (producing language) plays an equally major role in language development, and the opposite input, which mainly helps in identification and comprehension. Output compels learners to strenuously form and alter their linguistic knowledge. Swain introduced that producing language permits learners to:

- Note gaps in their linguistic knowledge.
- Examine hypotheses about language use.
- Obtain feedback and change their output accordingly.

Output-driven tasks, for instance speaking and writing, encourage learners to engage in deeper processing, reinforcing their vocabulary retention and grammar proficiency.

1.2.4 The input hypothesis (IH):

The Input Hypothesis, which Stephen Krashen developed, stipulates that learners acquire language when they receive "comprehensible input" that is just beyond what is familiar to them (i+1). The Input Hypothesis is an important component of Krashen's general theory of second language acquisition (SLA) that emphasizes the role of language understanding and input processing as crucial elements of effective learning. The following section provides an extensive analysis of the main features of the Input Hypothesis.

1.2.4.1 Comprehensible input:

Comprehensible input refers to language that learners can understand, which is crucial for acquisition.

It encourages student engagement with linguistic resources that pose difficulty yet remain within their current skill levels (Luo,2024). Effective pedagogical approaches can be developed through the delivery of rich and varied linguistic input, enhancing students' listening, speaking, reading, and writing skills (Chen et al., 2024).

1.2.4.2 Limitations and Assessment:

While the Input Hypothesis has significant implications for language instructional methodologies, it is also important to recognize its limitations and the need for an increased understanding of language acquisition processes. This perspective is one that calls for different instructional methods to be applied by educators to serve learners' various needs. Pauzan (2024) argue that the Input Hypothesis does not define "comprehensible input" exactly, thus limiting its real application to ordinary contexts. Some researchers suggest that the theory does not properly account for the role that one's mother tongue plays in second language learning. Additionally, the hypothesis has been scrutinized for its limited focus on the role of affective factors in language learning (Pauzan, 2024).

In addition, Krashen's Input Hypothesis, as a "central feature" of his Monitor Model, is confronted by strong challenges based on three key arguments. Firstly, the theory has been accused of impenetrable vagueness; critics argue that Krashen failed to define terms "comprehensible input" and "i+1" sufficiently, creating problems of testability and multiple meanings. Moreover, Krashen is thought to contradict himself in suggesting an overall "level of competence" and narrowing it down to grammatical features ("structures at our next 'stage'"). White (1987) accuses of imprecision in introducing "specific syntactic examples." Vagueness survives in "natural order" as well, which McLaughlin (1987) designates as an "un-existent theory of acquisition sequences," making it difficult to specify particular structures involved in acquiring them. The process of acquisition itself is termed as "equally obscure," and critics like Gregg (1984) argue that Krashen only provides specifications of transition conditions but no "mechanism for moving along any given 'stream of progress.'"

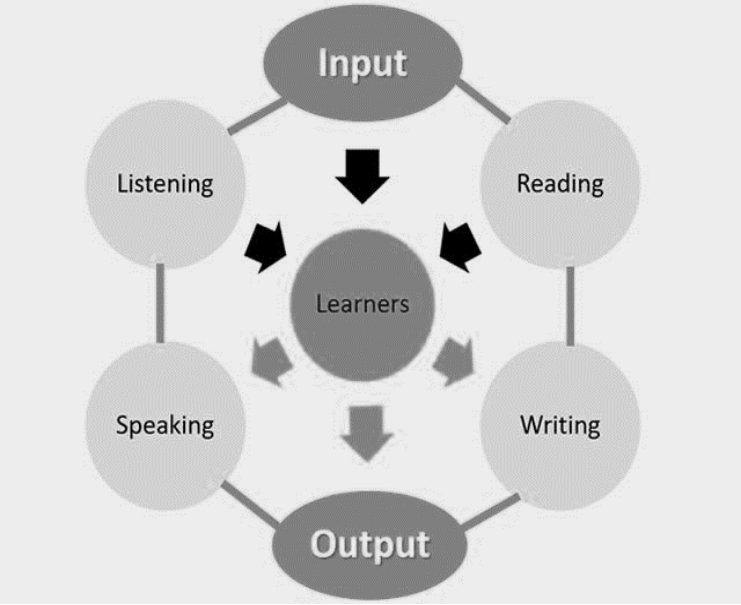
In second, simplification of input, exemplified using instances like caretaker speech (CS), teacher talk, and foreigner talk, is challenged. White (1987) contends that Krashen is "misguided", presenting evidence that shows CS is not always structurally simpler than adult speech and propounding that intricate maternal speech can actually assist language development. Moreover,

"comprehensible" does not necessarily link to "structural simplicity," and an exclusive reliance on simplification of input might deny learners of crucial elements that exist within richer language.

Lastly, Krashen (1985) is accused of exaggerating the role of the Input Hypothesis and presenting it as "the single most crucial concept" in second language acquisition (SLA) as well as introducing it as an exclusive causal force. However, it turns out to be internally contradictory, as acquisition is possible independently of input using "internally-driven systems" or even incompletely understood "formulaic expressions." Externally, the hypothesis requires strengthening by integrating other theoretical constructs, such as Long's Interaction Hypothesis and Swain's (2000) Output Hypothesis. These constructs argue that, while comprehensible input is most important, it is not sufficient to explain overall SLA.

Figure 4

The input and the output in language teaching



Note. The four language skills (reading, writing, listening, and speaking) are interdependent, with input and output closely linked, and all contributing to the learner's interlanguage development. Rhalmi, M. (2019, October 30). Input and output in second language acquisition - My English pages. *My English Pages*. (https://www.myenglishpages.com/input-and-output-in-second-language-acquisition/)

1.3 Mobile-assisted language learning (MALL):

Mobile-assisted language learning (MALL) relates to the application of mobile devices, such as smartphones, tablets, and other portable technologies, to promote language teaching (Kukulska-

Hulme & Shield,2008). It promotes flexibility, accessibility, and learner autonomy, empowering students to commit to language learning at any time and from any place (Burston,2014).

MALL has greatly progressed from plain content delivery to more engaging and individualized learning experiences that elevate vocabulary acquisition. Recent studies have underlined the validity of mobile applications in providing real-time, contextualized vocabulary disclosure. As a case in point, Chakir and Lamjahdi (2024) discovered that using WhatsApp for teaching vocabulary in Moroccan schools remarkably refined learners' recall of new words. Benlaghrissi & Ouhadi (2023), alike, spotlighted that "mobile learning made learning more flexible and adaptable by offering the opportunity to learn anywhere at any time. Moreover, thanks to the teacher's guidance, learners become more creative and critical thinkers.

Additionally, research by Boroughani T, Behshad N, and Xodabande (2023) highlighted the importance of applications like Quizlet and Anki in reinforcing vocabulary learning through adaptive and spaced repetition techniques, which lead to both short-term and long-term retention. Another study by Koleini et al. (2024) spotlighted that "mobile-assisted learning eases students' vocabulary acquisitions by establishing interactive, context-rich, and learner-centered environments that enhance memory and application of technical vocabulary". It also promotes high improvement, such as digital flashcards (Anki, Quizzlet, etc) in a university context, ensuring that mobile-assisted learning outperforms conventional techniques in vocabulary progress. These results strengthen the function of MALL in fostering adaptive learning, where mobile applications adjust vocabulary exercises to individual learners' necessities and development levels, ensuring continuous engagement and proficiency.

1.3.1 Mobile-assisted language learning in the EFL context:

The use of Mobile-Assisted Language Learning (MALL) in English as a Foreign Language (EFL) education forms part of a broader trend towards digitally mediated pedagogy emphasizing learner autonomy, pervasive access, and real-time engagement. In a general sense, MALL entails the use of mobile hardware, such as smartphones, tablets, and mobile apps, to facilitate language learning in both formal and informal settings. Mobile technologies have brought new potential to language learning through the provision of context-anchored, personalized, and adaptive interaction with language input and production. According to Kukulska-Hulme and Shield (2008), MALL "can facilitate language learning outside the traditional classroom and into the learner's everyday life," highlighting the potential to redefine the geographical and temporal boundaries of instruction.

Nevertheless, MALL must also be approached cautiously through scrutiny of its instructional integration, preparedness of the learner, and appropriateness of the environment.

Although many studies prove MALL to have a positive impact, predominantly on reading skills, vocabulary, and speaking abilities, closer inspection identifies theoretical and practical limitations.

Vocabulary acquisition remains among the most studied fields in MALL studies. Zou and Li's (2015) systematic review of mobile apps in learning vocabulary finds that "MALL tools incorporating multimedia support and spaced repetition algorithms have the potential to strengthen lexical retention." Quizlet, Memrise, and Anki have also been lauded for their interactive user interface and user-friendliness. However, the authors note that the vast majority of studies have a weak study design and do not separate superficial short-term memorization from in-depth lexical recall. As the authors would have it, "technology alone does not guarantee successful vocabulary learning; a pedagogical framework and authenticity in task design are necessary" (Zou & Li, 2015, p. 24). This proposition finds support in Stockwell and Hubbard's (2013) advocacy for MALL driven by pedagogy that argues that "technology innovation must be guided by learning theory and instructional design."

In reading literacy, Keezhatta and Omar (2019) conducted an experiment in Saudi secondary schools and assessed statistically significant improvement in reading ability in mobile-app-using students in conjunction with traditional instruction. The authors notice that "MALL materials and systems improve reading comprehension skill among EFL students" and speculate that relatively glossed or interactive comprehension activities in digital form could facilitate enhanced reader engagement (p. 437). The study also reveals some obstacles to implementation: student concern about distraction, parent concern about mobile learning, and the absence of technical support in the school. In this way, although MALL has promise in terms of pedagogy, it's oftentimes dependent upon infrastructure, digital literacy, and broader socio-cultural acceptability.

Speaking ability, which generally remains underdeveloped in traditional EFL classrooms because of time and class-size limitations, has also been enhanced by MALL. In the review of the literature as a systematized study, the authors of the review article by Ghanizadeh et al. (2021) refer to a series of studies exposing students to MALL tools in the form of voice recording apps, voice recognition programs, and video-based oral activities and achieving increases in fluency, pronunciation, and confidence. They specifically note that "the opportunity for the learner to hear their own speech and receive feedback increases their self-monitoring and metacognition" (p. 9). The authors do deplore the lack of longitudinal studies and assert that "research tends to fall short of investigating whether these gains are sustained or transferred to

real-life speaking situations" (Ghanizadeh et al., 2021, p. 11). The question remains whether MALL scaffolds perform only in a transient way or lead to enduring oral competence.

A range of studies attest to the importance of learner and teacher attitudes in ensuring the achievement of MALL projects. For Saudi Arabia, to take a specific example, Omar and Keezhatta (2019) include that "students have negative attitudes towards learning English, and many of their parents didn't encourage their children to study English" (p. 438). This encapsulates a latent conflict in the culture in which value for English language ability in the education system isn't always reinforced by socio-cultural values. Similarly, teachers also reported a lack of MALL tool-training for teachers, thus the tool was used superficially without depth in the pedagogy adopted (Alsulami, 2016). These findings echo the concept of the "implementation gap" in MALL by Wang and Vásquez (2012), whereby app development and policy leadership precedes teacher preparedness and to alignment in the curriculum.

There is also a need to critically problematize the learner autonomy assumption that informs most MALL discourse. While mobile devices undoubtedly offer the learner more autonomy of location, pace, and time of learning, not all learners have the necessary metacognitive or motivational strategies to tap these affordances. In circumstances where the students have a traditional teacher-focused approach to instruction, MALL induces anxiety or disorientation rather than empowering the learner (Burston, 2014). There is consequently a need for more nuanced learner-readiness conceptualization and a move away from across-the-board implementations. In short, although MALL has promising potential to assist EFL learners in vocabulary, reading, and speaking, its success or failure cannot automatically be assumed and relies on intertwined complex factors—technical, instructional, institutional, and cultural. As the literature increasingly demonstrates more and more often today, a more critical, theory-informed, and context-sensitive attitude towards MALL is needed. Taking the above quotation from Kukulska-Hulme et al. (2011), successful MALL "requires more than the presence of technology; it asks for a reconceptualization of how, where, and with whom we learn."

*

1.4 Data-driven learning (DDL) and its impact on productive vocabulary:

It is an approach where Students engage in data-driven learning, language models facilitate productive vocabulary acquisition by showing learners lexical structures in natural settings, permitting them to assume meanings and usage models autonomously (Vyatikina,2023). Studies recommend that incorporating digital corpora into language teaching increases learners' motivation and amplifies vocabulary retention.

Integrating digital corpora into an EFL learning setting correlates with progress in AI-driven tools such as ChatGPT, which use highly linguistic information to facilitate vocabulary acquisition. Chat GPT develops productive vocabulary learning by giving contextualized word usage and examples, replicating real-life conversations, and providing instant feedback. This amalgamation of digital corpora and AI-driven learning empowers data-driven approaches and forces MALL S position in vocabulary acquisition development.

1.5 Artificial intelligence and vocabulary learning:

1.5.1 AI tools in SLA:

Implementing Artificial Intelligence tools in acquiring a second language holds vast advantages that optimize the learning of the language. AI tools have the potential to provide individualized learning by providing learning content that addresses the learner's individual requirements, support, and learning style. Personalization ensures that the learner is challenged but not overpowered, a language learning requirement for optimal acquisition. AI tools enable interactive learning by ensuring instant feedback and customized exercises that make learning interactive. This ensures that the learning takes place in a more interactive and productive learning environment as compared to the use of traditional methods based on rote learning and passive learning. (Songsiengchai, et al, 2023)

Additionally, AI applications are well worth leveraging in adhering to the Input Hypothesis and Interaction Hypothesis theories in language learning, both emphasizing the need for comprehensible input and interactive communication. AI can provide comprehensible content at the individual learner's level as well as model real-life interactive environments with ease, with purposeful use being attainable. AI's scalability makes the effective methods possible with more people outside the confines of the traditional classroom. With provision for instant feedback as well as learning path adjustment according to the performance of the students, AI plays a key role in making language learning more effective, and thus the performance of the learner more enhanced. (Songsiengchai, et al, 2023).

1.6 Adaptive learning and AI-generated feedback:

Adaptive learning in vocabulary acquisition relates to AI's capacity to analyze learner performance and adapt teaching appropriately. platforms or applications from Duolingo, Grammarly, and Chat GPT built on the use of AI to generate exercises and texts for individual learners, insisting on introducing new vocabulary at a chosen period for recalling (Cui & Sachan,2023). These tools empower engagement and convey personalized learning experiences, advancing the effective development of vocabulary.

According to Song & Song (2023), ChatGPT's capacity for immediate instructiveness helps learners to practice vocabulary in context, thus ensuring retention and utilization. Besides this, content delivered through AI ensures quality writing by the detection of lexical inaccuracies and the furnishing of relevant recommendations. Features in the latest updates of tools such as ChatGPT, driven by AI, encourage learners to consider context-based real-time corrections with significant contributions to vocabulary accuracy and fluency.

1.6.1 Limitations of AI-generated content:

Although AI-driven vocabulary tools include benefits that contribute to EFL students' acquisition journey, these tools come with certain drawbacks according to Humeniuk, I. (2024).

Academic artifice: AI tools can be inaccurate for task completion, which leads to misunderstanding in learning.

Dependence on AI tools: This may hinder students' independence in learning, concerning critical thinking and problem-solving.

Errors in AI-generated content: AI tools can produce texts with grammatical, phonetic, or contextual errors, fundamentally affecting language proficiency.

Research lacking: The implementation of AI in language learning is restrained by an inadequacy of research on its significance.

1.6.2 AI in the EFL Context: Teaching Speaking and Writing Emphasis

The application of artificial intelligence (AI) in education has accelerated in recent years, revolutionizing the study and instruction of English as a Foreign Language (EFL), particularly the speaking and writing skills, two of the most cognitively demanding and communicatively important language skills. AI applications offer interactive, adaptive, and scalable instructional and assessment tools for speaking and writing. A closer analysis, however, exhibits unbalanced

affordances and challenges for the two skill areas and requires a pedagogically informed approach to their adoption.

1.6.3 AI in Teaching Speaking: Promises and Pitfalls:

These AI-assisted tools, such as speech recognition tools, intelligent pronunciation tutors, and AI-assisted chatbots (for example, EAP Talk, EyeSpeak, and ChatGPT voice interfaces), enable real-time speaking practice, pronunciation correction, and conversation modeling in a secure and comfortable environment. Students using EAP Talk enhanced their fluency, grammar, and presentation skills according to Zou et al. (2023), and flexibility and convenience are key strengths.

These developments are also balanced against their limitations. Speech recognition systems still struggle to accommodate intonation and accent and consequently offer poor or generic feedback. Students in the work of Zou reported that AI-based feedback was not detailed enough to support more complex organizational or pragmatic approaches to speech.

In addition, technical mistakes have the potential to erode the confidence of the learner in formative settings.AI in Writing Instruction: Collaborative Opportunities and Risks In composition, AI tools—ranging from as early as Grammarly and Quillbot to the ChatGPT and Kimi's generative models—have demonstrated keen promise for assisting learners toward the achievement of grammatical correctness, lexical complexity, and textual coherence. Tang (2025) found that Chinese EFL learners found the tools to be favorably perceived for language optimization, strategic feedback in writing, and generation of ideas. Tools such as ChatGPT not only provided corrections but also aided the composition process in the pre-composition, compositional, and revising stages.

Nevertheless, the benefits to AI-aided writing are double-edged. Over-reliance on AI-written content risks obscuring the voice and important thinking of the student. There exists the risk of plagiarism by default and compromised learner independence, and the problem of ethics and instructional intentions (Tian, 2024; Roe et al., 2025). AI-aided writing instruction must therefore balance support and clear boundaries, and metacognitive practice.

Table 1

Comparison of AI Tools in Speaking and Writing Instruction in EFL Contexts

Aspect	Speaking Instruction	Writing Instruction
Feedback Type	Pronunciation, fluency, intonation	Grammar, coherence, style
AI Tools	EAP Talk, EyeSpeak, ChatGPT (voice),	Grammarly, ChatGPT, Kimi, Quillbot
Learner Control	Moderate (guided responses)	High (editable, iterative collaboration)
Challenges	Recognition accuracy, shallow feedback	Overreliance, plagiarism, lack of
Pedagogical Needs	Scaffolded interaction, anxiety reduction	Metacognitive training, ethical

Note. This table compares AI tools used in EFL instruction by skill focus. Speaking tools emphasise pronunciation and fluency, whereas writing tools focus more on textual organisation and grammar. Data synthesized from Jiang (2022), Zou et al. (2023), Tang (2025), and Roe et al. (2025).

Although both speaking and writing benefit from the use of AI support, writing tools have more sophisticated features and more precise feedback currently. Speaking tools are less elaborate in terms of language but more conducive to spontaneous practice. Therefore, both skills require differing pedagogy to maximally use AI.

1.6.4 A Pedagogical Model for AI Integration:

In order to maximize the pedagogical potential of AI to teach EFL speaking and writing, we support a blended and ethically grounded approach. Drawing on the AIAS model is a pedagogical model promoting **AI literacy, ethical integration, instructional design alignment**, and **student critical engagement** of Roe, Perkins, and Furze (2025), I suggest the following four pillars for the instruction of EFL:

1.6.4.1 Training and Awareness:

Teachers and students need baseline education on AI literacy—how AI tools work, what they do and do not do, and how to use them responsibly.

1.6.4.2 Instructional Alignment:

Educate students to utilize AI as a collaborator or a dialogue partner rather than a substitute. Teach editing and questioning AI responses and cultivate critical thinking. Ethical Considerations and Policy Support Institutions must guide the use of AI by crafting clear policies in areas involving data privacy, academic honesty, and instructional value. Students must also learn to use AI both ethically and critically. In conclusion, although AI holds unprecedented promise to support oral and written language practice in the EFL environment, its use must be approached cautiously, pedagogically sound, and ethically managed. According to Kristiawan et al. in 2024, "AI tools facilitate student engagement and increase language capacity, especially speaking and writing, but cannot replace the crucial responsibility of human judgment, encouragement, and guidance".

Conclusion

In summary, vocabulary acquisition in the context of second language acquisition (SLA) is a fundamental component, particularly for English as a Foreign Language (EFL) learners who seek to attain communicative competence. In this context, productive vocabulary—the active use of lexicon in reading and speaking—is an important aspect of effective scholarly and professional communication. However, the development of such vocabulary is a significant challenge for many learners, thus prompting the need to develop innovative strategies and student-oriented pedagogical interventions. Different theories, such as Nation’s framework, the Involvement Load Hypothesis, Swain’s Output Hypothesis, and Krashen’s Input Hypothesis, cumulatively explain the mechanisms underlying vocabulary acquisition, retention, and use within an integral paradigm. These frameworks emphasize that vocabulary learning is optimally achieved when supported by continuous exposure,

context-rich input, cognitive effort, and meaningful output, which cumulatively enhance the conversion of receptive vocabulary to productive use.

In line with the rapid development of learning technologies, Mobile-Assisted Language Learning (MALL) has become an effective method for learning vocabulary. Specifically, the integration of AI-powered tools like ChatGPT into MALL systems has enabled interactive, tailored, and engaging learning activities. Such materials encourage autonomous learning, contextually appropriate word usage, and instant feedback, which, as SLA theories suggest, support interaction and language production as pivotal features. For that reason, this review aims to outline the theoretical and conceptual underpinnings of vocabulary acquisition within SLA and MALL contexts, complemented by an empirical exploration of effective application of ChatGPT as an aid mechanism to support vocabulary learning for learners of English as a Foreign Language (EFL). Such interdisciplinary synthesis hopes to merge theory and novel technological approaches, thus creating a foundation for extensive research into vocabulary acquisition with AI support.

chapter Two

Chapter Two: Empirical Insights into MALL and Productive Vocabulary Development

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conclusion

Introduction

In this chapter, we analyze current dynamics of vocabulary learning, highlighting Mobile-Assisted Language Learning's (MALL) great role and rising reliance on Artificial Intelligence (AI) tools, most importantly ChatGPT. Firstly, the chapter evaluates the core roles of MALL in vocabulary acquisition, highlighting the revolutionary role of mobile technology in enabling exposure to lexical input in versatile, mobile learning environments. In addition, it is discussed how MALL utilizes evidence-supported strategies like spaced repetition, gamification, and instant feedback to enhance vocabulary retention.

Despite its advantages, MALL has specific limitations, especially regarding the effective use of vocabulary in authentic communication contexts. This chapter presents a critical exploration of such limitations, which include issues like screen fatigue, over-reliance on automated responses, and limited social interaction. Later, the discussion turns to the revolutionary prospects that ChatGPT as an artificial intelligence tool offers for vocabulary development. We will explore its strengths in providing instant, personalized feedback and engaging in interactive dialogue to promote deep lexical retention and use.

Additionally, the chapter highlights how writing plays an important role in promoting vocabulary development by showing that engagement in written language provokes higher cognitive effort and reinforces word memory. Further, this chapter presents an analysis of ChatGPT as writing support and its impact on oral communication in vocabulary learning, looking into how artificial intelligence can aid in conversational training while respecting the problems of simulating real oral communication. By evaluating both strengths and limitations of these technological advances, this chapter aims to provide an informed analysis of their role in learning vocabulary as well as possible approaches to integrating them into language learning

2. Mobile-Assisted Language Learning (MALL) for Vocabulary Retention:

2.1 Application of MALL for Vocabulary Acquisition:

The increased pervasiveness of smartphones and tablets has transformed the medium of learning into the prime facilitator of learning vocabulary. Empirically, studies consistently demonstrated that MALL apps facilitate enhanced retention of lexis because they offer flexible, on-the-move access to lexical input (Burston, 2015; Kukulska-Hulme & Viberg, 2018). The work of Alotaibi (2020), and Wang & Smith (2021), supports the argument that mobile technologies offer learners repetitive and contextualized repetition of the lexis, which is critical for retention. Compared with the homogeneous context of the typical learning classroom, MALL offers learners the facility of access to the lexis through multimedia inputs, like the aural pronunciations, pictorial supports, and practice exercises, enabling richer cognitive processes (Nation, 2013). Further, the mobility of handheld devices offers just-in-time learning assistance, triggering recall of the lexis from the lexis by micro-study sessions interpolated across contexts (Zhang & Pérez-Paredes, 2021).

2.1.1 Application of Spaced Repetition, Gamification, and Real-time feedback:

One of the strongest aspects of MALL is the employment of evidence-based learning strategies such as spaced repetition, gamification, and real-time evaluation.

2.2.1.1 Spaced repetition procedures:

which were studied by Peters et al. (2019), maximize the retention of words by systematically repeating words at the best spacing for maximum retention, opposite to the forgetting curve. Tools such as Quizlet and Anki leverage this effect, ensuring that learners review words at the optimum time for the consolidation of memory.

2.2.1.2 Gamification:

Adding game-like aspects such as points, badges, and leaderboards has been demonstrated to raise learner engagement and learner motivation (Deterding et al., 2011). Studies indicate that competitive, reward-based structures such as those on Duolingo and Memrise encourage practice on a daily basis, which is critical for word learning (Zou et al., 2022).

2.2.1.3 The real-time feedback:

The real-time correction capabilities of MALL tools allow the learners to correct their usage, spelling, or pronunciation mistakes on the spot (Liu & Zhang, 2020). As an illustration, the speech-to-text capabilities of software like Rosetta Stone offer the possibility of instant correction for learners for refining the lexical precision. Immediate reward follows the behaviorism theory of learning, whereby instant correction strengthens the correct connection of a word (Skinner, 1957).

2.2 MALL Restrictions for Active Use of Vocabulary

The limitations of M For all its strengths, MALL has a grave weakness in terms of productive vocabulary (active use for writing and speaking). Although MALL excels at the practice of receptive vocabulary (identification and comprehension), studies by Stockwell (2013) and Sun & Gao (2021) indicate that students will fail to apply learned words to spontaneous communication. The reason lies in the fact that the majority of MALL software focuses on passive identification exercises (i.e., fill-the-blank, multiple-choice tests, etc.) instead of generative exercises (i.e., sentence construction or dialogue practice, etc.). Screen fatigue, with excessive mobile usage resulting in cognitive overload and low levels of attention, is also an issue (Chen & Hsu, 2020). The students also become overly reliant on automated responses with little regard for underlying lexical processing and contextual word usage (Hwang & Fu, 2019). There is also no social interaction on most MALL settings, limiting opportunities for communicative practice required for the activation of vocabulary (Swain, 1995).

2.3 MALL Future Directions for Vocabulary Learning:

To overcome such limitations, future MALLs can encompass adaptive learning technology that adjusts the practice of vocabulary based on the learner's level (Luckin, 2018). Incorporating AI-driven conversational agents can also simulate natural conversation, bridging the gap from passive reception to active usage. Lastly, hybrid learning strategies that integrate MALL with the classroom can supplement retention of the lexicon with less screen time (Godwin-Jones, 2021).

2.3.1 ChatGPT as an AI Tool for Vocabulary Acquisition:

Recent research has examined the role of AI-driven tools like ChatGPT in vocabulary learning. Studies by Ziegler et al. (2023) and Lee & Kim (2022) suggest that ChatGPT can facilitate meaningful interaction and scaffold vocabulary development by providing learners with real-time, adaptive responses tailored to their linguistic needs. Learners engaging with ChatGPT reportedly improve their ability to use new vocabulary in various contexts, as the tool offers interactive dialogues that reinforce word usage through contextually appropriate prompts. Moreover, Xu & Li (2023) found that ChatGPT helps deepen lexical retention by encouraging learners to construct sentences, paraphrase meanings, and receive corrective feedback, which collectively contributes to more effective vocabulary acquisition.

Additionally, AI-mediated learning has been shown to promote autonomous learning habits, allowing learners to repeatedly engage with the chatbot without time constraints, refining their vocabulary at their own pace (Huang & Zhang, 2023).

2.3.2. Benefits of ChatGPT-Generated Feedback in Vocabulary Acquisition;

ChatGPT delivers real-time feedback and correction on the use of words, assisting learners to hone correct word choice (Bai et al., 2023). Wang & Huang's (2023) research indicates that AI-driven feedback strengthens learners' self-correction capacity of word choice and comprehension of words' subtle differences. Personalized AI feedback was also advocated by Lu & Sun (2022), where learners interacted with greater vocabulary engagement in comparison to obsolete learning resources.

Nevertheless, the effectiveness of ChatGPT feedback is relative to the accuracy of information and context. Chen et al. (2024) illustrate the potential of AI in being incorrect or misleading with proposals on the use of idiomatic phrases, or even specialised terminology. Criticism of AI feedback is still required. Hybrid approaches combining the monitoring of humans, as proposed by Li & Garcia (2023), can be utilised for managing such risks and ensuring learners receive well-informed guidance for the optimisation of ChatGPT's potential as a vocabulary learning resource.

2.3.3 AI Interactions Impact on Vocabulary Retention and Application:

The interaction of ChatGPT enables better retention of terms. Xu et al. (2023) and Li & Zhou (2022) reveal that learners exposed to AI-aided dialogues exhibit better retention of terms than those exposed to the regular means of learning. This is attributed to the repetitive, as well as contextualized, nature of AI-aided conversation. In addition, the application of new terms is easily supported by AI interaction. Unlike rote learning, AI supports the active application of terms learned in varied contexts. ChatGPT, for instance, can generate simulated real-life settings, prompting the learner to apply terms correctly and innovatively. This active recall, as noted by Smith (2021), consolidates understanding, aside from developing fluency. Having the ability to obtain instant feedback on the application of terms, correct mistakes, and offer substitute utterances also enhances the learning experience. The continuous mechanism of feedback ensures learners not only retain new terms but also become proficient in using the terms correctly in varied communication settings.

2.4 The Role of Writing in Productive Vocabulary Acquisition:

Writing plays an important function in successful word acquisition, facilitating extensive learning and memory. It engages students in a mental exercise that makes their lexical understanding robust, as word writing activity necessarily requires more demanding word usage than speaking. It facilitates the analysis of the necessity of writing in word acquisition, the impact of written output on

word recall, and the cognitive demand of writing. Laufer (2013) suggests that the use of writing carries an important proportion toward the transmission of complex concepts through scholarly word usage.

2.4.1 The Significance of Writing for Vocabulary Learning:

Writing facilitates word learning through requiring learners to work actively with words. It facilitates lexical diversity, variation, and collocational ability, all important aspects of good communication (Laufer, 2017). Moreover, the learners most often mentioned their greatest writing problem as having too little word stock at their disposal, and they alluded to the fact that explicit teaching of lexis is needed (Laufer, 2013). Writing brings active use of lexis, having improved higher-order cognitive abilities compared to passive learning methods (Tu et al., 2024). Activities such as writing text continuations were shown to maximize understanding and word memorization as they require the learners to convey meaning through words (Tu et al., 2024).

2.4.2 Studies on Written Production and Vocabulary Retention:

Research proves that writing can facilitate improved memorization of vocabulary, particularly when students can write and then edit as much as they wish. This longer timeframe allows them to elaborate and deal more profoundly with the acquired vocabulary, enhancing memory and recall. When students are provided time to reflect, edit, experiment, and manipulate their own words and sentence order, they are more involved and invested and are more able and inclined to learn and integrate new vocabulary effectively (Webb & Piasecki, 2018). In addition, this writing allows students to create links between the new and their meanings and put the vocabulary into their own lives. Writing is not merely an instrument of communication but also an important factor in the intellectual and linguistic growth of students.

Zaytseva et al.'s research (2021) offered revealing insights into how different language production modes shape learners' lexical growth. Specifically, the research identified students working on writing tasks to exhibit much greater lexical diversity and competence than students working mostly on speaking tasks. The comparison suggests that writing can support more reflective and more varied use of language that allows learners to practice and integrate more lexis and formulaic sequences. The outcome thus affirms the merit of adding writing tasks to language learning study programs as a means to maximize learners' expressiveness and overall linguistic competence.

It is contended that writing, especially when given much time to express their thoughts and ideas, plays an important role in word learning of vocabulary. This is due to the fact that writing involves more mental processing of word and meaning and hence one is able to understand the language on another

level. Through much writing, learners are able to execute various contexts and intricacies of the word and hence there is improved word saving and understanding of word they are working to acquire. Evidence proofs that writing allows improved word saving compared to other approaches, including passive reading or mere memorization technique. Writing forces the brain to work harder to organize, put in place, and consolidate new word, and hence the word becomes set and fixed on the learner's linguistic inventory. In addition, this study attests to the invaluable input writing provides to productive word learning because the acquisition of writing facilitation is concurrent to language development. Being able to write and hence communicate not only enhances one's word inventory but enriches communication ability as a whole, and as such, it is an invaluable exercise when learning an extranational word (Tu et al,.2024)

According to Silva et al. (2021), give an elaborate explanation of the involvement load hypothesis, or a theoretical explanation of how tasks of different natures impact learning of vocabulary. The article emphasizes that writing task participation, especially sentence and composite sentence writing, significantly supports the learning of vocabulary. This is because writing requires deeper mental processing compared to speaking tasks. Writing tasks force learners to deeply involve their minds when processing information, extract word meanings from context, and utilize them creatively within sentence contexts. Such deep mental processing ultimately leads to improved understanding and long-term recall of vocabulary. The article provides evidence and explanations of how writing tasks can best facilitate learning of vocabulary and suggests that language learning courses incorporate writing practice to achieve maximum learning for learners.

2.4.2.1 Cognitive Load and Deeper Processing:

There are Writing assignments are among the components of learning language and frequently serve crucial roles in students' cognitive growth. Nevertheless, as they are performed, writing assignments also produce an increase in cognitive load, or the extent of mental efforts processed through working memory. When students are required to perform writing tasks, they are not just responsible for generating and structuring their thoughts but also do not know when they are done. Additionally, they are anxious about writing mechanics, grammar, punctuation, and spelling. Such combined demand on their cognitive capacities becomes overwhelming. When the cognitive load is not properly managed, acquisition and storage of words are interfered with. As per the views of Silva et al. (2021), this tension created by these writing assignments slows down students' learning and application of emerging vocabularies and makes learning ineffective. Hence, it is crucial that the teachers employ interventions that avoid cognitive overload when students are writing, including providing easy-to-understand instructions, the use of

collaborative writing assignments, and providing writing modes within writing. Through this, teachers maximize students' word acquisition and make writing assignments maximally enriching.

Writing makes greater cognitive demands than speaking and encourages more elaborative processing of the word. Such is because they impose requirements of correct word selection and formal word use, which more often requires use of relatively infrequent and formal word usage (Laufer, 2013). Where writing is coherent and structurally sound, this can facilitate greater cognitive processing. Such can, indeed, pave the way to allow vocabulary to be committed to long-term store (Barcroft, 2006). Through writing and the focus given to structure and coherence, the learner is encouraged to commit more of the supplied vocabulary to long-term storage. In this way, writing activities can be utilized to allow improved long-term recall and understanding of vocabulary.

2.4.3 ChatGPT as a Writing Assistant for Vocabulary Learning:

ChatGPT is an effective writing application for vocabulary learning using AI-powered prompts and guided exercises to achieve vocabulary enrichment for learners of all levels. Research indicates that it is extremely effective in enhancing writing capacity by allowing students to enhance their use of vocabulary based on individualized feedback and corrections. Such personalized learning not only enables learners to discover their own lexical deficiencies but also encourages lexical richness and complexity and command of language in general (Arbi, 2024; Abduljawad, 2025; Ibrahim & Kirkpatrick, 2024).

2.4.4 Error correction and feedback:

ChatGPT serves a significant function in optimizing the use of vocabulary in its multi-faceted process of language acquisition, as can be witnessed in a sequence of research studies. It facilitates vocabulary learning through exposure to new words together with their meaning, pronunciation, and use in context, which are vital in language mastery (Khzouz et al., 2024). Language learning through the use of ChatGPT, particularly in teaching vocabulary, enables learners to learn word form, meaning, and use, which correspond to Nation's multidimensional facets of vocabulary knowledge (Yıldız, 2023). Further, ChatGPT supports incidental and intentional vocabulary learning, promotes retention, and decreases cognitive overload, which has specific relevance in examination-driven environments such as Vietnam (see Ngo, 2024). In an experiment involving Saudi high school students, the utilization of a ChatGPT-powered application resulted in statistically significant gains in vocabulary learning, with students having positive attitudes towards the application (Aldowsari & Aljebreen, 2024). Also, in third-language acquisition, like L3 German, ChatGPT promotes lexical enrichment by enabling students to interact with and edit texts, thereby enhancing their academic performance through cognitive and affective aspects

(Yüzlü, 2024). In general, ChatGPT proved to be useful application in learning vocabulary by providing interactive and individualized learning activities, which are more efficacious compared to conventional approaches.

Nevertheless, constraints like over-reliance on AI, loss of human creativity, and inability to think critically to evaluate the AI-generated content have been cited. Most educators are worried that students will rely too much on these kinds of AI tools to an extent that their own writing inclination will be inhibited and thus will their independent thinking capacity (Abduljawad, 2025; Seelro & Khan, 2024). Moreover, students may find it difficult to evaluate the quality and appropriateness of the AI-generated content, undermining the originality of their writing.

In all, the utilization of ChatGPT in teaching writing can facilitate vocabulary acquisition and assist in the development of linguistic competence, yet a balanced method is necessary in order to make up for its deficiencies. Educators are encouraged to incorporate discussions around AI usage, fostering critical thinking skills and encouraging students to use AI as a supplement rather than a crutch in their writing process (Alsaedi, 2024; Ibrahim & Kirkpatrick, 2024). This holistic integration of AI tools in education can lead to a more enriching and effective learning experience.

2.4.5 AI's role in improving lexical variety and complexity in writing:

AI has a notable impact in the development of lexical complexity and diversity in writing, especially among second language (L2) learners. The use of artificial intelligence in language learning settings has attracted growing interest in its promising advantages. Literature shows that AI-supported interventions, such as using tools like ChatGPT, can enhance the deployment of complex vocabulary by learners. This enhancement is manifested through moderate achievements in C1+ lexical understanding and application in writing tasks (Pitura, 2024). These tools not only make learning new words easier but also motivate learners to apply them in writing, solidifying their linguistic capacity and confidence.

In addition, AI-produced texts are formal and sophisticated in vocabulary. This feature is especially helpful in that it can act as a model for L2 writers, who use more diverse and context-specific language (Zhang & Crosthwaite, 2025). Through exposure to good-quality texts exemplifying higher-level lexis and sentence structures, AI can assist learners in enriching their lexical stores and cultivating more sophisticated writing styles. These AI-generated writings can serve as a reference point, allowing students to imitate and learn from the grammatical structures to which they are exposed.

That being said, as much as AI tools can render lexical complexity greater, they can also inadvertently render overall syntactic complexity lesser. This finding presents a contradictory effect on writing quality, demonstrating that while students can use more complicated words, complicated

structures characteristic of proficient writing might not necessarily ensue (Danping, 2024). This mismatch implies that there needs to be a prudent application of AI tools because students can concentrate more on lexis at the cost of creating varied syntactic structures.

Furthermore, AI use in the classroom presents unavoidable matters of academic integrity and the unique linguistic experience of human writers compared to AI-generated text (Zhang & Crosthwaite, 2025). The reliance on AI tools may lead to concerns regarding originality and the extent to which AI-generated content can be considered authentic. As educators navigate the implications of AI in writing instruction, they must address these ethical considerations while fostering a learning environment that promotes both lexical richness and syntactic depth.

Overall, AI's potential to enrich lexical diversity in writing is evident. Yet, it requires thoughtful pedagogical consideration to weigh its strengths and weaknesses (Danping, 2024) (Lew, 2024). Teachers are summoned to leverage the strengths of AI in augmenting vocabulary enrichment while ensuring learners are actively involved in substantive writing exercises that foster an integrated mastery of the language. With an effective incorporation of AI tools, language learning can be a more engaging and rewarding process, and L2 learners can be empowered in the end with what it takes to become effective speakers of their target language.

2.5 ChatGPT's Role in Speaking for Vocabulary Development:

2.5.1 Encouraging Practice in Conversation for Vocabulary Development:

ChatGPT is an interactive vocabulary developing tool that offers real-time conversational practice (Aldowsari & Aljebreen, 2024). ChatGPT gives learners an opportunity to practice conversations that are simulated, in which new words, sentences, and word patterns can be experimented with. The AI system also offers context-based vocabulary exercises, supplies synonyms, explains terms, and corrects grammatical errors, thereby enabling correct usage (Lo et al., 2024). Moreover, it tailors conversations to the user's proficiency level, gradually introducing them to more complex vocabulary and expressions to facilitate language acquisition. Through constant use, learners can increase active vocabulary, improve retention, and become more confident in oral communication (Wang & Lin, 2024).

2.5.2 Differences Between Spoken and Written Vocabulary Development:

Spoken and written vocabulary development vary on a range of important dimensions (Lo et al., 2024). Written vocabulary is formal, organized, and extensive to facilitate accurate word selection and compound sentence formation. Spoken vocabulary tends to be informal, context-sensitive, and controlled by pronunciation, tone, and fluency. ChatGPT can fill this gap by providing practice in both modes; it can provide formal written explanations as well as mimic natural spoken conversations. But vocabulary

learning through spoken language needs to focus on phonetics, intonation, and response when speaking, where the limitations of AI-provided text-based feedback might become evident (Wang & Lin, 2024).

2.5.3 Challenges: AI Feedback and Real-World Spoken Communication:

Even with its strengths, ChatGPT is limited when it comes to enabling real-world spoken communication. The greatest flaw is the lack of non-verbal signals, including gestures, facial expressions, and intonation shifts, that are vital for effective verbal communication (Aldowsari & Aljebreen, 2024). The feedback from AI would also be devoid of cultural context and situation appropriateness, causing potential misinterpretations. The second flaw is that natural dialogues are dynamic, involving spontaneous replies, turn-taking abilities, and flexibility, which cannot be recreated exactly by AI (Lo et al., 2024). In order to overcome these setbacks, AI learning must be supported with human interaction, practice in pronunciation, and listening to real-life spoken conversations to achieve balanced vocabulary development (Wang & Lin, 2024).

conclusion

In this chapter, the various roles of Mobile-Assisted Language Learning (MALL) that integrates Artificial Intelligence (AI) tools, such as ChatGPT, to support vocabulary learning among language learners were explored in detail. Firstly, the chapter provided an overview of many of the important benefits of MALL, e.g., its pervasive availability, effective integration of evidence-based practices like gamification and spaced repetition, and its capacity to deliver instant feedback. All these advances have redefined learners' interface with novel vocabulary to be flexible and customized to individual needs.

However, examination also revealed the inherent limitations of traditional MALL applications, particularly concerning the development of productive vocabulary skills. The tendency towards passive identification exercises and a lack of authentic communicative practice often hinder learners from actively applying new lexis in real-world speaking and writing contexts. This critical gap underscores the need for more sophisticated and interactive tools to bridge the divide between receptive knowledge and productive fluency.

The advent of ChatGPT emerges as a promising solution to many of these challenges. As demonstrated, ChatGPT's capacity for generating personalized, contextualized interactions and providing immediate, nuanced feedback significantly bolsters both vocabulary retention and application. Its ability to simulate natural conversation and facilitate generative writing tasks addresses the limitations of many conventional MALL platforms, moving learners beyond mere recognition towards active and creative use of language. Furthermore, the chapter highlighted the crucial role of writing in deep vocabulary acquisition, showing how the cognitive demands of written production foster

more robust and lasting lexical knowledge. ChatGPT's utility as a writing assistant, providing error correction and promoting lexical variety, further solidifies its potential in this domain. While acknowledging considerable potential of artificial intelligence to support language learning, it is also necessary to address certain inevitable constraints of AI. Issues of uncontrolled reliance on AI, potential biases in feedback systems, and subtlety of human interaction within communicative practices require an informed strategy. Hence, future initiatives towards enhancing vocabulary need to endorse an integrative model that blends strengths of AI technologies with directions from human instructors and natural communicative contexts. This integration will not only enhance learners' vocabulary but also develop critical thinking and skills for coping with the communicative demands of real-life contexts. In conclusion, an effective integration of mobile-assisted language learning and advanced AI tools like ChatGPT is crucial to supporting more interactive, productive, and effective pathways of vocabulary gain among language learners.

Chapter three

Chapter Three: The Methodology

Introduction

The methodology chapter serves to outline how the research was conducted so that it is easily replicated, validated, and later judged for value based on the findings. Selecting the appropriate research methodology is important as it helps the researcher assess feasibility, anticipate the upcoming outcomes, and identify possible challenges or risks that may arise during the study (see Mehiri,2017). The present study adopts a qualitative exploratory approach to form an understanding of the intricate relationships between AI tools and learners' practice in language acquisition environments. The qualitative position is "a situated activity that places the observer within the world" and involves "an interpretive, naturalistic posture to the world" (Denzin & Lincoln, 2018, p. 6). It endeavors to comprehend things in contextualized conditions, where the researcher does not aim to manipulate the phenomenon under study but observes it as it naturally exists (Creswell & Poth, 2018). The exploratory position, in particular, is adopted to investigate poorly understood or emerging topics and uncover emerging trends and themes (Stebbins, 2001).

This chapter opens with a discussion of the methodology: theoretical framework, by defining a research paradigm, research approach, research design, and data collection, as well as defining data analysis procedures. Then, see these elements in the context of this study.

3. The methodology: the choice and rationale

3.1 Research Paradigm:

The current research is founded on the interpretive paradigm traditionally linked with qualitative and exploratory research. The aim of the paradigm is merely to comprehend the world as perceived from the perspective of individuals living it, focusing on subjectivity, context, and co-construction of meaning between individuals and the researcher (Lincoln & Guba, 1985; Schwandt, 2000). For the current research, the interpretive stance facilitates an in-depth understanding of third-year EFL learners' experience and interpretation of ChatGPT as a MALL medium in developing productive vocabulary. The focus is on researching their experiences, concepts, and dispositions within an educational context in as naturalistic conditions as possible.

Interpretivism rejects positivist notions of objective truth for an argument that reality is plural and produced through sociality (Cohen, Manion, & Morrison, 2018). It is, therefore, perfectly well-suited for applied linguistics and for learning technology studies in which learners' identities, experiences, and learning styles are brokered through individual, institutional, and cultural agencies. Therefore, the researcher's role is anything other than hypothesis testing or variable measurement: rather, close engagement with the participants to comprehend their lived experience. Such

engagement is central to knowledge production in interpretivistic studies, wherein depth of knowledge is prioritized over generalizability.

Aside from that, this paradigm enables the researcher to discover the situational and contextual concerns of AI-based vocabulary learning, including learner motivation, perceived utility of feedback, and the dynamics of learner–machine interactions. These do not lend themselves to quantitative measurement but can be probed with qualitative tools like interviews and observations. Therefore, the interpretive paradigm underpins the research's emphasis on flexibility and discovery and is peacefully aligned with the exploratory nature of the research design and the open-ended research questions.

Lastly, it is important that such a paradigm also accommodates the researcher's positionality. Rather than seeking absolute neutrality, interpretive researchers acknowledge that their biases, backgrounds, and interpretations inevitably color the research process (Merriam & Tisdell, 2016). That is why reflexivity and transparency are incorporated in the methods of collecting and analyzing data in the current study, such that the results will indeed express the voices and realities of the participants involved.

3.2 Research Approach:

The nature of the current inquiry is qualitative in character and purpose. Qualitative inquiry is generally considered the appropriate approach when the investigation aims to capture the individual experiences of the participants as well as the meanings they attribute to particular phenomena (Denzin & Lincoln, 2018). The current inquiry focuses on how EFL learners experience and view the use of ChatGPT in Mobile-Assisted Language Learning (MALL) for enhancing productive vocabulary. The approach enables the researcher to capture the richness and contextual nuance of learners' digital device use in authentic learning environments.

3.3 Research Design:

The qualitative approach is particularly well-suited for the exploratory nature of the current investigation. Exploratory research is warranted when the investigated phenomenon has not been researched in depth or lacks an established body of theory (Stebbins, 2001). The use of ChatGPT in EFL vocabulary instruction in Algerian universities is an as-yet-unresearched domain. The current investigation, accordingly, is not intended for testing hypotheses so much as for producing new knowledge and insights that have the potential to be precursors for subsequent empirical studies and curriculum development. For these purposes, the investigation hopes to uncover themes and patterns that shed light on learners' use of ChatGPT for vocabulary learning. Accordingly, the case study approach has been chosen to inform the collection and analysis of the data. The case study enables an

in-depth examination of a bounded particular context—a given first-year EFL student cohort in, for instance, Biskra University—to achieve in-depth insights into the localized nature of technology-enhanced language learning (Yin, 2018). The case study is precisely the method used for answering "how" or "why" questions, which is in line with the leading research goal: examining how the students use ChatGPT and why its use can legitimately be asserted as being helpful (or not) in enhancing productive vocabulary. Exploring just one case in depth allows the investigation to provide an extended, rich-context description of student experience, attitudes, and approaches.

The exploratory case study approach also permits multiple sources of information, such as reflective journaling, classroom observations, and semi-structured interviews, all of which enable triangulation and increased credibility in the results (Creswell & Poth, 2018). The approach can also be used with an iterative process of collection and analysis of the data, with themes developing incrementally and refining the direction of investigation as novel results arise. Such adaptability is particularly useful in newly emerging or developing investigation areas, such as the use of artificial intelligence in language instruction.

3.4 Data Collection Methods:

In order to address the aims of this exploratory study, a qualitative data collection method was employed, where depth of understanding was prioritized over generalizability. Under the interpretivism paradigm, the primary concern was investigating how Biskra University third-year EFL students engage with ChatGPT as a mobile-assisted tool to facilitate their productive vocabulary in speaking and writing tasks.

3.4.1 Population and sampling technique:

The choice of participants were 12 third-year (L3)English department students from the Department of English and Literature at Biskra University in the academic year 2024-2025, the sampling used was snowball sampling, where the participants recruited participants via other participants who were purposively selected based on their availability, voluntary participation, and regular exposure to writing and oral expression tasks handed to be answered and for the reflective questionnaire link which provided as an online google form sent in group built for them in Facebook where shared also the conversations they had with chat gpt for the writing and speaking task. The tools of this study are task-based tasks(one writing test and one speaking test) and a post-task open-ended questionnaire, which allowed the researcher to extract authentic learner performance and reflective comments.

3.4.2 The task-based performance task;

The use of task-based performance reflects the productive character of vocabulary learning, which must be tested by using language in a real context (Nation, 2013). The participants were asked to conduct two tasks in their active use of vocabulary: written and spoken tasks (see Appendix A). The tasks were designed to simulate academic or communicative settings common among third-year students.

3.4.2.1 The writing task:

The writing exercise consisted of students composing a short argumentative paragraph on a prompt that had been pre-discussed with the assistance of ChatGPT as a vocabulary generator and idea builder.

3.4.2.2 The speaking task:

The speaking exercise was a short oral presentation or opinion-sharing activity, assisted by prior experience with ChatGPT to facilitate vocabulary recall and building. The rationale for these tasks was to assess the impact of ChatGPT on students' contextually appropriate and topic-relevant vocabulary production in both modalities.

3.2.4.3 Structure and aim:

The structure of the writing and speaking task is divided into three sections. The first section presents the participant consent, where they were introduced to the goal of their participation in this study, which involves their participation being fully voluntary and able to withdraw from being part of this data collection process. The section ends by signing the consent statement. In the second section, the students are introduced to the writing task by providing a question of writing an argumentative essay by following the instruction with the usage of ChatGPT as an assisting tool to guide them. For the second task, the participants had to prepare an oral presentation about a topic using the assistance of ChatGPT and record and transcribe the presentation.

3.2.4.4 Piloting and validation:

In March 2025, the piloting was conducted by five students of the third year who accepted to be part of this process, after their last session of writing expression. According to their engagement with the tasks, a few alterations were made to create a final task with the ability to provide solid and acceptable work.

3.2.5 The questionnaire:

With the task completion, an **open-ended questionnaire (**Appendix B)was administered to all participants. The instrument was designed to elicit reflective comments regarding their experiences with ChatGPT during the task preparation and execution phases. Open-ended items were explicitly chosen to allow students to express themselves in their own words, thereby tapping the

qualitative depth required to interpret how the students perceived the value of ChatGPT, the vocabulary they learned or reinforced, and any challenges they encountered. This tool was a window into students' cognitive and affective processes in responding to the use of AI in their vocabulary learning.

Using a performance task and a post-task qualitative instrument together allows for the triangulation of data sources and a balanced view of the study phenomenon. Using these instruments together allowed the researcher to link learners' productive language use, as observed, with their internal self-evaluation of how ChatGPT affected their output. This dual-layered design is in keeping with qualitative exploratory best practice, particularly within applied linguistics, where learner self-perceptions and linguistic performance are significant to guide an encompassing analysis (Dörnyei, 2007; Mackey & Gass, 2016).

3.2.5.1 The structure and aim:

The questionnaire (see Appendix B) is an online questionnaire submitted to the third-year students who participated in the writing and speaking task. .it includes four sections, beginning with research goals and the researcher's pieces of information. The first section provides questions on their general experience with ChatGPT for the respondents. The second section on reflection of ChatGPT on writing, the third section for reflection of ChatGPT on the speaking task, and a section was made for Attitudes Toward ChatGPT in Language Learning, with an additional comment. To sum up, this questionnaire was submitted to acknowledge whether ChatGPT reflected on their writing and speaking preparation process by leaving an impact, or if the experience wasn’t pleasant.

3.2.5.2 Piloting and validation:

The questionnaire was piloted by the supervisor. The questionnaire was adjusted according to the notes that recommended drawing a right form for the respondents to answer it, and validated to be published by their acceptance, ensuring its reliability.

3.3 Data Analysis Procedures:

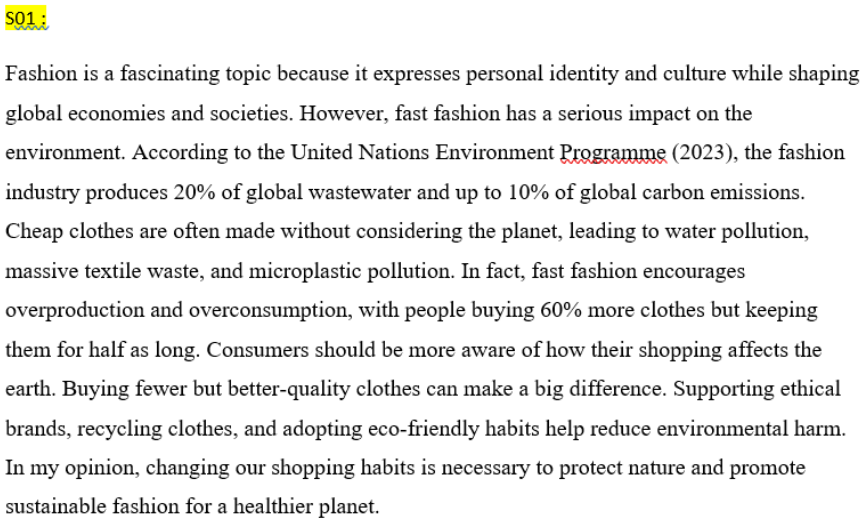
Following Braun and Clarke’s (2006) phase models, thematic analysis was employed to analyze the data collected from third-year students at Biskra University from the writing task and speaking task, the shared interactions with ChatGPT, and the reflective questionnaire. This method was selected due to its flexibility and suitability in identifying and interpreting the patterns of meaning across various textual data in an exploratory educational setting.

3.3.1 Familiarization with Data :

All the data provided, starting from the writing, speaking, and conversations shared by students with ChatGPT for writing and speaking tasks, were transcribed in the form of a Word document (check Figure 05) first and read repeatedly to ensure a deep understanding of all the data collected. The researcher engaged in immersive reading and initial notetaking to identify ideas, tone, and vocabulary patterns that appeared from the data.

Figure 5

Transcribed data in a Word document.



S01 :

Fashion is a fascinating topic because it expresses personal identity and culture while shaping global economies and societies. However, fast fashion has a serious impact on the environment. According to the United Nations Environment Programme (2023), the fashion industry produces 20% of global wastewater and up to 10% of global carbon emissions. Cheap clothes are often made without considering the planet, leading to water pollution, massive textile waste, and microplastic pollution. In fact, fast fashion encourages overproduction and overconsumption, with people buying 60% more clothes but keeping them for half as long. Consumers should be more aware of how their shopping affects the earth. Buying fewer but better-quality clothes can make a big difference. Supporting ethical brands, recycling clothes, and adopting eco-friendly habits help reduce environmental harm. In my opinion, changing our shopping habits is necessary to protect nature and promote sustainable fashion for a healthier planet.

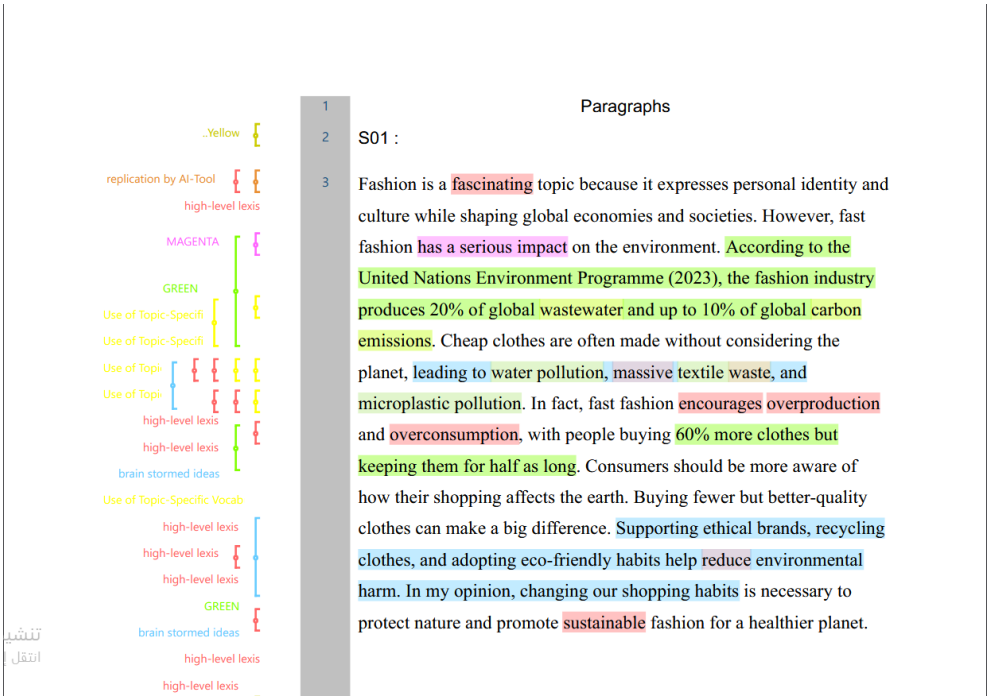
Note. Sample of how data is transcribed using Word.

3.3.2 Generating Initial Codes:

The process of coding was an inductive coding. where the data segments were labeled based on recurring or significant elements without imposing pre-existing theoretical constructs. The codes were generated manually in MAXQDA24 by creating a code system to label and categorize segments that reflected the key insights across the participants' answers. later, these codes were organized into broader codes to facilitate the thematic developments.

Figure 6

Initial codes generated using MAXQDA24



Note. This is a sample from the written paragraphs for one of the students coded by using MAXQDA. The coding scheme for written paragraphs, transcribed presentations, conversations of the students with Chat GPT for the speaking task, and conversations of students with Chat GPT for the writing task are provided in the coding books (look for the appendices).

3.3.3 Selection of general themes:

Codes were grouped into broad potential themes based on conceptual similarities. This required close analysis and coding comparison among similar codes in both data sources, the paragraphs written, the transcribed scripts, and dialogues with ChatGPT (for speaking and writing tasks), as well as answers to the survey. Attention was given to the interaction among students' real use of the tool (task interaction) and their self-reported perceptions (reflection). This step revolves around uncovering repeated patterns related to the students' experiences with ChatGPT in vocabulary development.

3.3.4 Reviewing and Defining Themes:

Following on from this process, the themes will be assessed in terms of their internal cohesion and their separation from outside themes, and redundant and lack-of-evidence codes removed and combined through consolidation. Next, specific definitions for each theme will be generated and carefully written to clearly encompass their scope and importance in relation to the research questions. The Results section of the report will finally contain an unpacking of each theme supported by related quotes and analytic discussion that grounds its findings in the broader context of mobile-assisted vocabulary learning.

3.4 Data Analysis and Results Interpretation:

The main objective for the analysis of the data was to examine in-depth the qualitative data gathered from third-year EFL learners to explore the use of ChatGPT as a MALL tool for productive vocabulary learning. As the nature of the inquiry was exploratory, it was imperative that the method for analysis used was capable of capturing the richness and intensity of the participants' experiences and perceptions in an organized and meaningful manner.

In order to achieve the above aim, thematic analysis was selected as the most appropriate methodological strategy, as mentioned earlier, to allow for the detection, coding, and interpretation of recurring patterns, facilitating an in-depth understanding of the phenomena under analysis. The six-step thematic analysis model presented by Braun and Clarke (2006) was used in this study, widely acclaimed for providing an in-depth analysis leading the analysis through the process of familiarizing the data, coding, theme generation, reviewing, defining, and then reporting data. It ensured derived themes were well-supported in the data, while simultaneously providing interpretative insights into the research issues.

With this framework in mind, the analysis sought not merely to record the experiences of the participants but to explain how the features of ChatGPT facilitate or hinder effective vocabulary acquisition in writing and speaking tasks. What was done in the thematic analysis process is explained step by step in the following subsection.

3.4.1 Description of data set:

The qualitative data used in the course in this study were collected from twelve (12) third-year EFL students at Biskra University. The data consisted of three major elements: the writing task, the speaking task, shared conversations with ChatGPT for writing and speaking tasks, and a reflective questionnaire, all aimed at exploring the role played by ChatGPT in productive vocabulary learning.

The writing task was for students to write short essays on the given educational topics, utilizing vocabulary support and responses provided through engaging with ChatGPT. The task sought to investigate the degree to which students use AI-recommended responses in improving the use of productive vocabulary in written language.

The speaking task involved having the participants perform an oral production task, in which the participants responded with ChatGPT-based questions presented in a manner that elicited spontaneous use of words. The tasks were audio-recorded in order to monitor verbal responses and dialogue with the AI.

Following the above activities, the students completed **a questionnaire** in the form of open-ended questions to determine their experiences, attitudes, and perceptions while utilizing the ChatGPT tool for vocabulary learning through Mobile-Assisted Language Learning.

All speaking and composition task audiotaped sessions were transcribed verbatim for the sake of accuracy in the representation of participants' words and interactions. There were multiple quality control review cycles in the process of transcription. In addition, the written essays and the filled-in questionnaires were collected and made available for analysis.

The total dataset for the speaking task comprised almost 2 to 3 minutes' worth of audio of 12 students, transcribed into texts using the mobile application Otter.ai, the writing task consisted of 12 written essays, and 12 reflective questionnaires. The large and diverse dataset allowed for an in-depth thematic analysis in order to establish salient patterns in productive vocabulary learning through the implementation of ChatGPT.

3.4.2 The writing and speaking task:

This chapter offers a thematic analysis of speaking and writing student outcomes and their explicit interaction with ChatGPT. The aim of this analysis is to shed light on how third-year English as a Foreign Language (EFL) learners at Biskra University used ChatGPT as a Mobile-Assisted Language Learning (MALL) tool, in the context of acquiring productive vocabulary. Five main themes emerged from the data: artificial intelligence's impact on vocabulary improvement and writing skills, content and organization features in AI-created texts, learner autonomy and discourse development, comprehension and performance obstacles and limitations, and learners' approaches to creating content.

Table 2

Summary of Thematic Analysis

Theme	Short Definition	Illustrative Quotes
1. ChatGPT Facilitates the Generation of Useful Words and Content	ChatGPT assisted learners in generating topic-specific vocabulary and content ideas, enhancing lexical range and depth in academic writing.	"Productive Vocabulary: Yes, it harms the environment..." (ChatGPT)"Fast fashion contributes to environmental degradation due to excessive resource usage and waste." (S02)
2. Assisting in Developing Strong and Persuasive Arguments	ChatGPT aided learners in structuring coherent, persuasive arguments by organizing points logically and enhancing rhetorical clarity.	"There are three consequences of buying cheap clothes…" (S01)"You can argue that fast fashion is unsustainable by showing how it affects…" (ChatGPT)
3. Artificial Intelligence's Influence on Lexical Sophistication and Phrasing in Oral Presentations	ChatGPT usage led to the use of more sophisticated vocabulary and altered phrasing patterns in students' spoken responses.	"Well, a lot of people waste food tremendously every day…" (S12)"He is not aware of the effects and the results of his action to the environment…" (S01)
4. AI's Role in Content Structuring and Challenges in Oral Delivery	AI tools helped students structure oral presentations but sometimes affected fluency and naturalness in delivery.	"The effects, first, the big amount of wasted food harms the environment..." (S11)"Okay, well, I think for this presentation, it should include introduction me as a student…" (S01)
5. ChatGPT as a Stimulus for Efficiency and Linguistic and Structural Refinement	Participants found ChatGPT enhanced language acquisition efficiency, idea generation, and expression clarity in both writing and speaking.	"It helped me structure my points and use more academic vocabulary…""One of the benefits I noticed is the speed of generating ideas."
6. Balancing Utility with Authenticity and Ethical Responsibility	Learners acknowledged the benefits of ChatGPT but raised concerns about overreliance, loss of personal style, and ethical issues in academic use.	"Lack of personal style when we depend only on ChatGPT.""ChatGPT can be used ethically if I use it to get ideas… I must not copy everything."

Note. summarizes the six major themes discovered from the analysis of students' interactions with ChatGPT across writing and speaking tasks and reflective questionnaire responses (code books are inserted in the appendices, check appendix C, appendix D, appendix E, appendix F).

3.4.2.1 The Analysis of the Writing Task:

Our thematic analysis identified two prominent themes illustrating the nuanced interaction between students and ChatGPT in the context of the writing task: ChatGPT Facilitates the Generation of Useful Words and Content, and Assisting in Developing Strong and Persuasive

Arguments. These themes emerged from a careful exploration of recurring patterns in the students' conversations with ChatGPT (input)and written outputs (see Appendix C and Appendix D).

Theme 1: ChatGPT Facilitates the Generation of Useful Words and Content

The way ChatGPT facilitates students' acquisition of new vocabulary and production of beneficial writing content. The theme is addressed through discussion regarding the way students view and perceive ChatGPT as a means to "enhance their vocabulary," the way ChatGPT facilitates the use of the proper words in speech and writing through its direct provision to the learner.

☐From ChatGPT Conversations : "Here's a full brainstorming and language resource for your writing task on The Dark Side of Fast Fashion, The Environmental Cost of Cheap Clothes."... Productive Vocabulary: Yes, it harms the environment; High resource consumption; Fast fashion requires large amounts of water, energy, and raw materials..."

☐From Participants' Paragraphs : (As indicated by annotations and actual word choice) "high-level lexis," "brain stormed ideas," "Use of Topic-Specific Vocab." (e.g., in the paragraph s01: "According to the United Nations Environment Programme (2023), the fashion industry produces 20% of global wastewater and up to 10% of global carbon emissions."

Theme 2: Assisting in Developing Strong and Persuasive Arguments.

This is also related to ChatGPT assisting students in organizing their thoughts and expressing complicated ideas effectively and persuasively in writing. This relates to a significant manner in which ChatGPT facilitates users in choosing the appropriate words for speaking and writing tasks. It facilitates the selection of words and provides a framework upon which to use them effectively.

☐From ChatGPT Conversations: Providing detailed, organized points that can form the basis of an argument "Pollution : Factories release toxic chemicals into rivers ; synthetic fabrics like polyester release microplastics into oceans... Waste, Cheap clothes are often low quality and discarded quickly, ending up in landfills... Solutions and Alternatives : Promoting slow fashion : buying fewer, higher-quality, longer-lasting garments..."

☐From Participants' Paragraphs : Demonstrating the application of structured thought in the written output "There are three consequences of buying cheap clothes. First, massive waste generation, it encourages a throwing away culture... Second, cheap clothes can cause high water pollution and usage... Finally, ethical and environmental blind spot..." and "Consumers should be more aware of how their shopping affects the earth. Buying fewer but better-quality clothes can make a big difference. Supporting ethical brands, recycling clothes, and adopting eco-friendly habits help reduce environmental harm."

ChatGPT helped learners in building a coherent, persuasive argument by organizing thoughts

logically and enhancing rhetorical clarity.

3.4.2.2 Analysis of the Speaking Task:

Thematic analysis carried out yielded two major themes that describe the complex interaction between ChatGPT and students in the case of the speaking task**:** Artificial Intelligence's Influence on Lexical Sophistication and Phrasing in Oral Presentations and AI's Role in Content Structuring and Challenges in Oral Delivery. These themes emerged through careful analysis of patterns in the interactions between students and ChatGPT (input) and the resultant speaking products (see Appendix E and Appendix F).

Theme 3: Artificial Intelligence's Influence on Lexical Sophistication and Phrasing in Oral Presentations

Artificial intelligence software appears to impact a person's lexical choices and general syntactic arrangements in verbal presentations. These effects can be seen in the use of more complex vocabulary and idiosyncratic sentence forms.

- "Well, a lot of people waste food **tremendously** every day, everywhere, and it is a really **bad behaviour**." (Speaker 1, S12)

The deployment of words like "tremendously" and "behaviour," which can signal artificial intelligence's ability to make use of rich vocabulary or a specialized vocabulary, particularly in the area of “high-level lexis “or “productive vocabulary”.

- "He is not aware of the effects and the results of his action to the environment, **which like is so important to take care of our environment**." (Speaker 1, S01)

  The slightly elongated or less natural phrasing here could be indicative of “AI-influenced Phrasing” or how AI-generated sentences are incorporated into spoken delivery.

- "Today, I am going to talk about a **serious problem** we face every day, which is food waste." (Speaker 1, S11)

The direct and to-the-point introduction, though not complex, can reflect an artificial intelligence-driven methodology in structuring an introductory statement, or the use of specific environmental jargon enabled by AI, “Environmental Lexis via AI.”

Theme 4: AI's Role in Content Structuring and Challenges in Oral Delivery

The application of artificial intelligence in forming and organizing presentation material and the possible challenges involved in oral presentations through the incorporation of an AI tool assisted in clarifying the structure of the content. which plays an important role in delivering content.

- "Okay, well, I think for this presentation, **it should include introduction me as a student, if I'm in a situation which, like I should share with the students some easiest ways and** some," (Speaker 3, S01)

  This quote shows how the speaker outlines the structure and scope of their presentation, describing the influence of artificial intelligence in “brainstormed ideas from ChatGPT”, developing conceptual frameworks using ChatGPT, and “Compression of Ideas”, which is an integration of concepts by suggesting a logical flow of information.

- "The effects, **first, the big amount of wasted food harms the environment. By wasting food, we waste the resources used in transporting and processing food. Second, it is unfair to waste food while there are people out there starving**..." (Speaker 1, S11)

  The precision and concise presentation of ideas through clear enumerations like "first" and "second" conveys the role of artificial intelligence in compressing complex information “Compression of Ideas”.

- "Well, a lot of people waste food tremendously every day, everywhere, and it is a really bad behavior. It has many problems, like **pollution, dirt, diseases and animals death.**" (Speaker 1, S12)

  The following brief illustration demonstrates the ability of artificial intelligence in creating well-organized and accurate material suitable for later presentation verbally. While not overtly expressing any Expression or Fluency-related issues, clearly demarcated points may imply a reliance upon written material, and thus may interfere with the general natural pace of delivery of other presenters.

3.4.2.3 The questionnaire analysis:

This section clarifies the findings from a questionnaire survey of 12 respondents. The analysis will be arranged in a systematic manner initially so as to present descriptive statistics and visual data on closed-ended question responses, thus providing an extensive overview of the experience and perception of the respondent group in relation to the employment of ChatGPT in language learning aspects. Secondly, an examination of complex qualitative themes as they emerged from the open-ended responses will present clear insight into the challenges and advantages of employing ChatGPT and ethical issues.

Section one: general experience with ChatGPT

The first section provides an overview of the experience with ChatGPT after using it for the tasks

Item 1. *Distribution of Participants' Comfort Levels with ChatGPT*

Comfort Level	Total
Neutral	5
Comfortable	6
Very comfortable	1

Table 3: Total Distribution of Participants' Comfort Levels with ChatGPT

The results of the item are presented in the following figure:

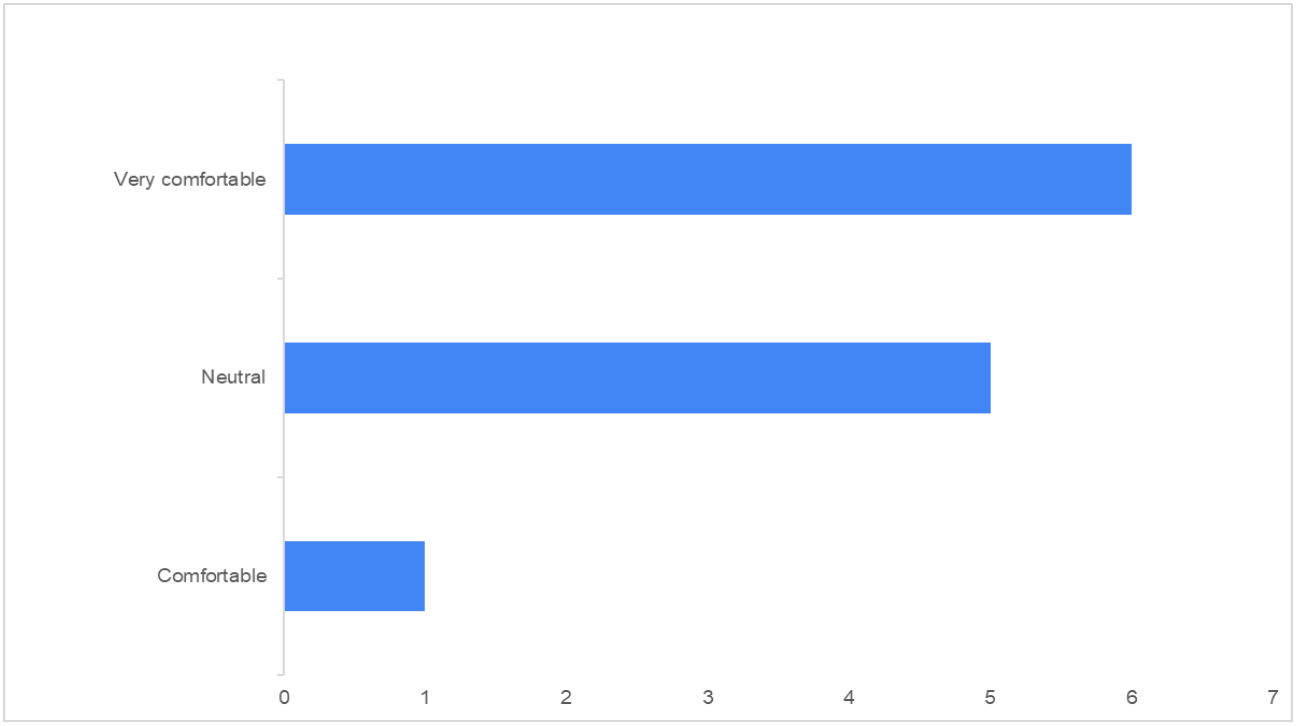


Figure 7: participants' comfort levels with ChatGPT

The responses demonstrate a high level of comfort among participants using ChatGPT for language learning tasks, with feeling 'Comfortable' (1) or 'Very comfortable' (6). Only (5) reported feeling 'Neutral', and 0 felt 'Uncomfortable' or 'Very uncomfortable', suggesting no significant negative feelings about using the tool. This readiness to engage favorably impacts their willingness to experiment with and find the tool helpful for future tasks

Item 2. *Distribution of Participants' Perceived Helpfulness of ChatGPT*

helpfulness Level	Total
Helpful	6
very helpful	6

Table 4: Total Distribution of Participants' Perceived Helpfulness of ChatGPT

.

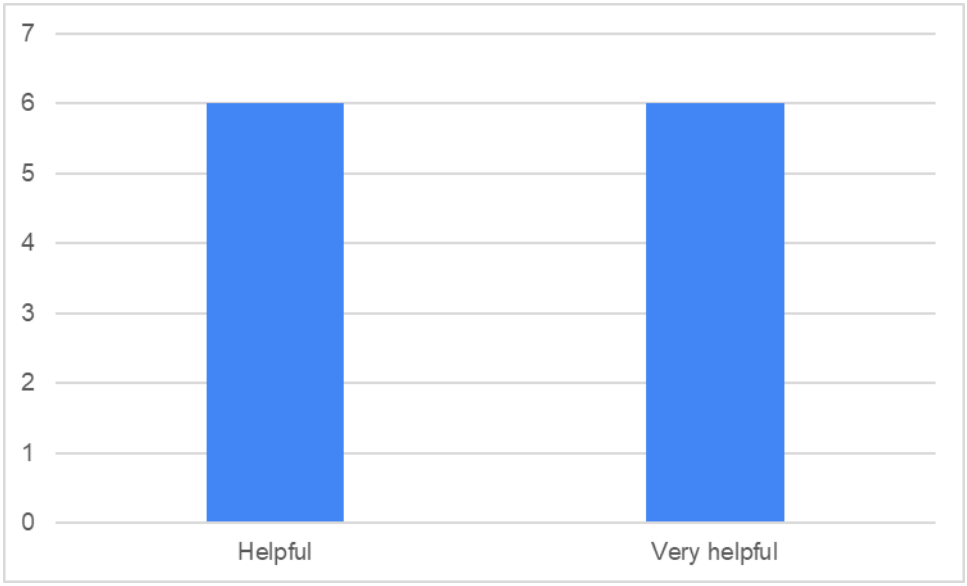


Figure 8: participants' perceived helpfulness with ChatGPT

Participants collectively assessed ChatGPT as helpful (6) or very helpful (6) for language learning tasks, without neutral or negative responses. This total approval shows a strong insight into ChatGPT's efficiency and value in educational contexts, proposing potential for AI tools in assisting language learning.

Section Two: Reflection of ChatGPT on Writing

Item 3. *Distribution of Participants for assistance in preparing the argumentative paragraph*

assistance type	Total
Corrected grammar and structure	**2**
Helped brainstorm ideas	**4**
Provided vocabulary or collocations	**5**
Suggested better sentence organization	**1**

Table 5. Total Distribution of Participants for assistance in preparing the argumentative paragraph

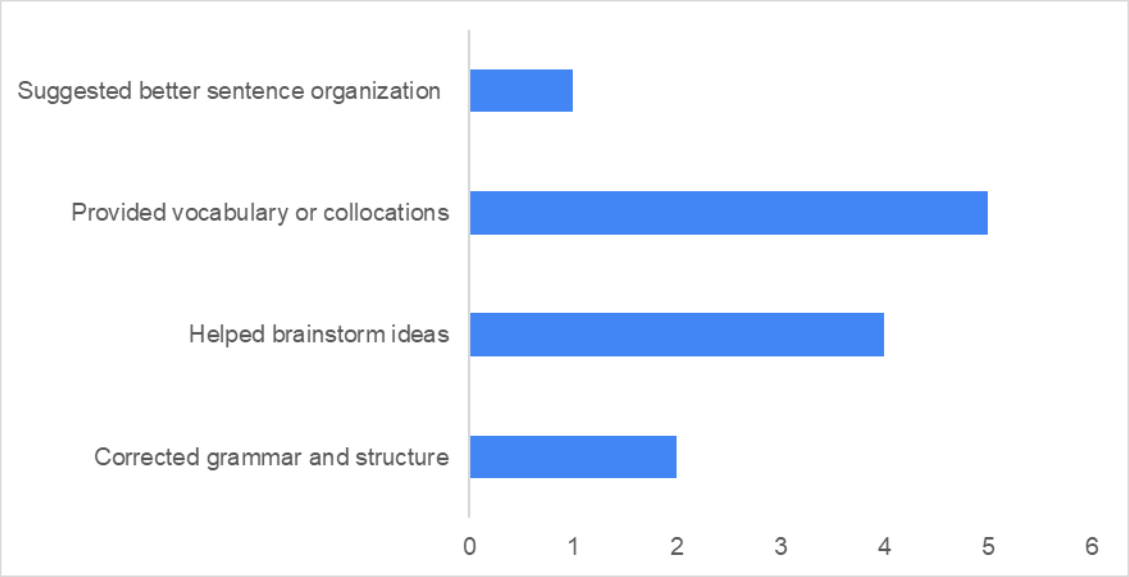


Figure 9: helpfulness of ChatGPT in preparing the argumentative paragraph

Participants found ChatGPT most helpful in preparing argumentative or opinion paragraphs, primarily in two areas: vocabulary and idea generation, with 5 selecting "provided vocabulary or collocations" and 4 choosing "helped brainstorm ideas", additionally, 2 found it useful for " corrected grammar and structure" and 1 for "suggested better sentence organization». Overall, ChatGPT was mainly utilized for linguistic elements and idea formulation while also aiding in grammar and organization.

Item4. *Perceived Improvement of the Final Paragraph After Using ChatGPT*

Improvement level	total
Improved somewhat	**3**
Improved a lot	**9**

Table 6: Total Perceived Improvement of Final Paragraph After Using ChatGPT

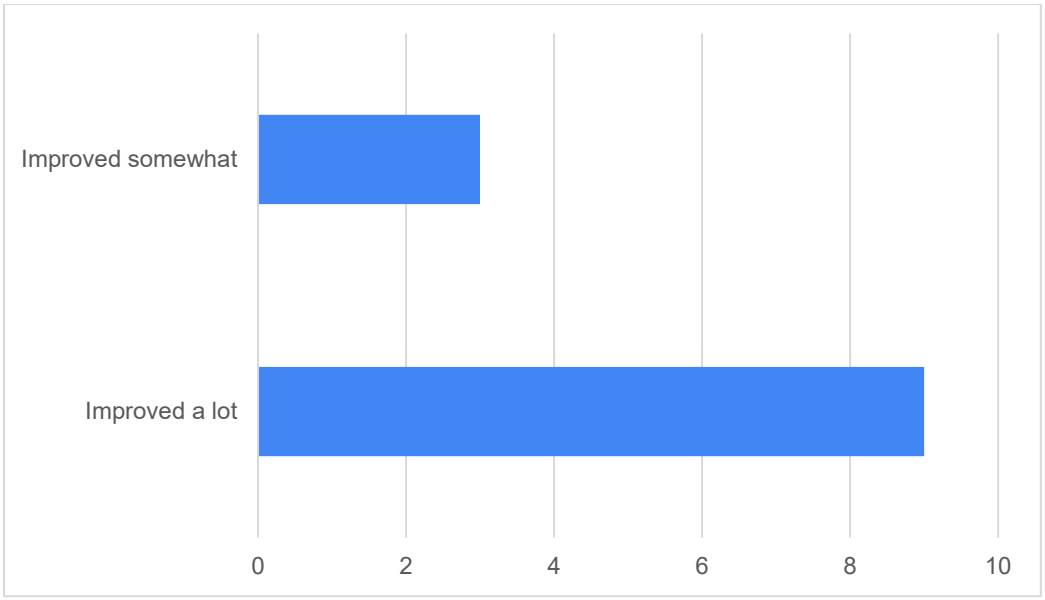


Figure 10:Perceived Improvement of the Final Paragraph After Using ChatGPT

Participants reported substantial improvement in their writing using ChatGPT, with (3) stating their final paragraph being “improved a lot” and (9) indicating “improved somewhat». None (0)of the students felt their paragraphs had “ not at all” or “improved a little”, highlighting the overall positive effect of ChatGPT on writing quality.

Item 5. *Total Perceived Enhancement of Expressing Ideas Clearly in Writing Using ChatGPT*

Enhancement	total
No	**1**
Not sure	**2**
Yes	**9**

Table 7.Total Perceived Enhancement of Expressing Ideas Clearly in Writing Using ChatGPT

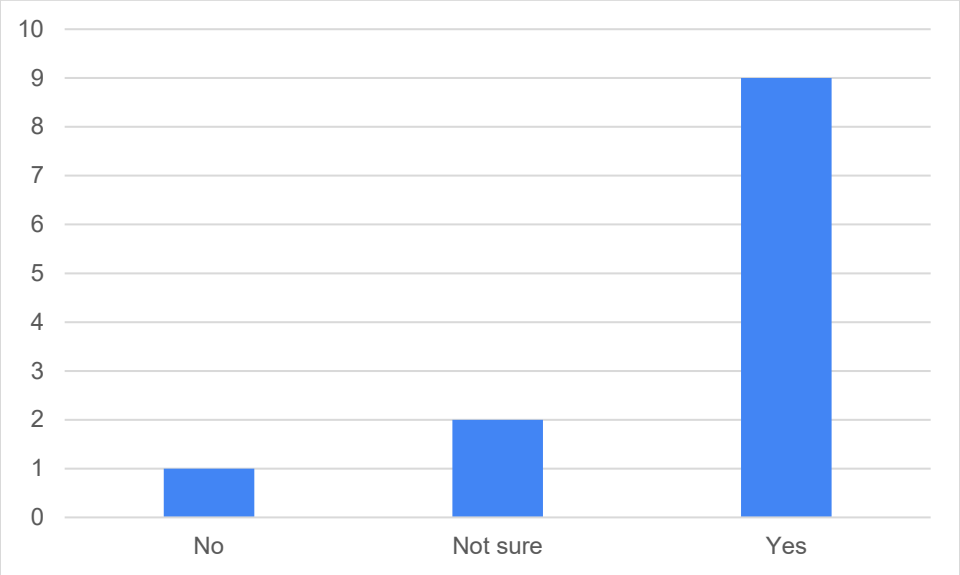


Figure 11.Perceived Enhancement of Expressing Ideas Clearly in Writing Using ChatGPT

A significant majority (9) of respondents have stated that ChatGPT improved the clarity of the writing, showing a largely positive impression towards the product. On the other hand, (2) hesitated and chose 'Not sure', and only (1) chose 'No', implying a limited negative impression. In conclusion, ChatGPT is perceived to be beneficial to communication through writing.

Section three: Reflection of ChatGPT on Speaking

Item 6. *ChatGPT Supported Speaking Task Preparation*

Support type	total
Suggested vocabulary and expressions	**7**
Helped generate main ideas	**6**
Improved sentence structure	**4**
Helped organize the flow of ideas	**3**

Table 8. Total of Chat GPT Support in Speaking Task Preparation.

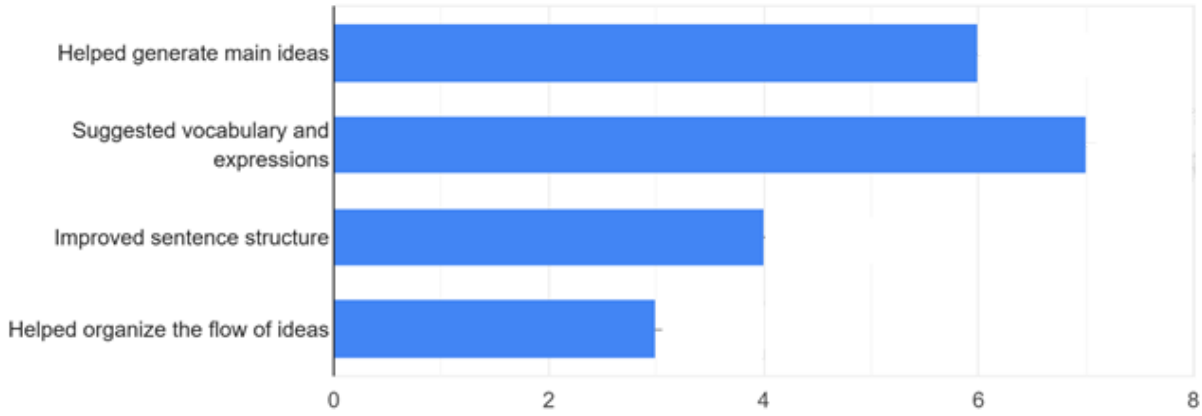


Figure 12.Forms of ChatGPT Assistance in Speaking Task Preparation

The students used ChatGPT mainly for speaking task preparation, with the significant support areas found to be "Suggested vocabulary and expressions" (7) and "Helped generate main ideas" (6). These findings indicate that participants relied on ChatGPT for language and content assistance. Additionally, (4) of the participants recognized its usefulness in "Improved sentence structure," while (3) considered it useful for "Helped organize the flow of ideas," thus reflecting its role in promoting coherence and grammatical correctness. ChatGPT appears to be a multifaceted tool for idea generation, vocabulary enrichment, and structure improvement for spoken presentations.

Item 7. *Confidence in Spoken Presentation After Using ChatGPT*

Confidence level	total
No	**0**
Not sure	**1**
Yes	**11**

Table 9: Total of Perceived Confidence in Spoken Presentation After Using ChatGPT

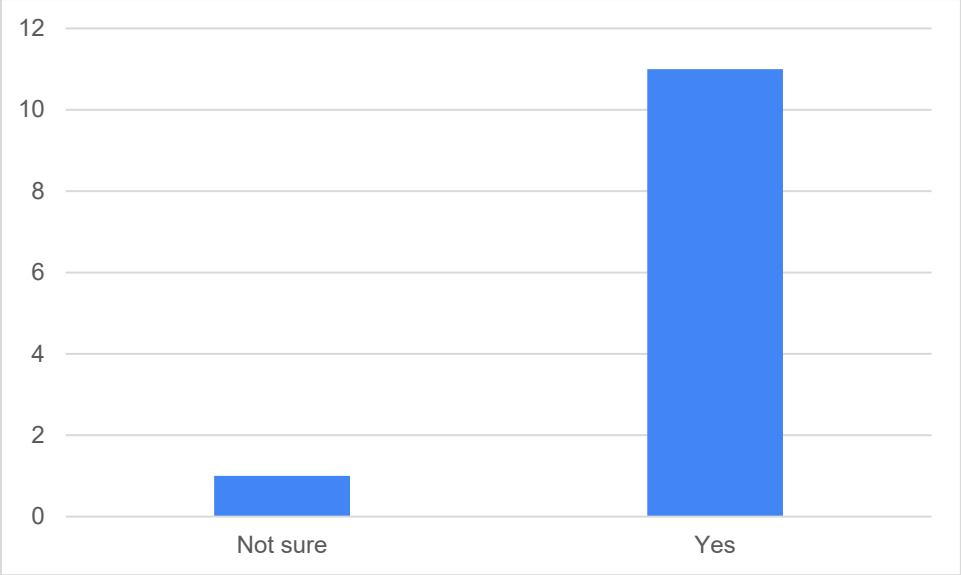


Figure 13.Participants' Perceived Confidence in Spoken Presentation After Using ChatGPT

The data shows that ChatGPT remarkably boosted participants' confidence in their spoken presentations, with (11) participants reporting an increase. Only one respondent (1) was missing. Overall, ChatGPT proved to be an effective tool for enhancing self-assurance in speaking tasks.

Item 8. *Naturalness of Speaking After Practicing with ChatGPT's Suggestions*

Naturalness level	total
Very natural	**8**
Somewhat natural	**4**

Table 10: Total Perceived Naturalness of Speaking After Practicing with ChatGPT's Suggestions

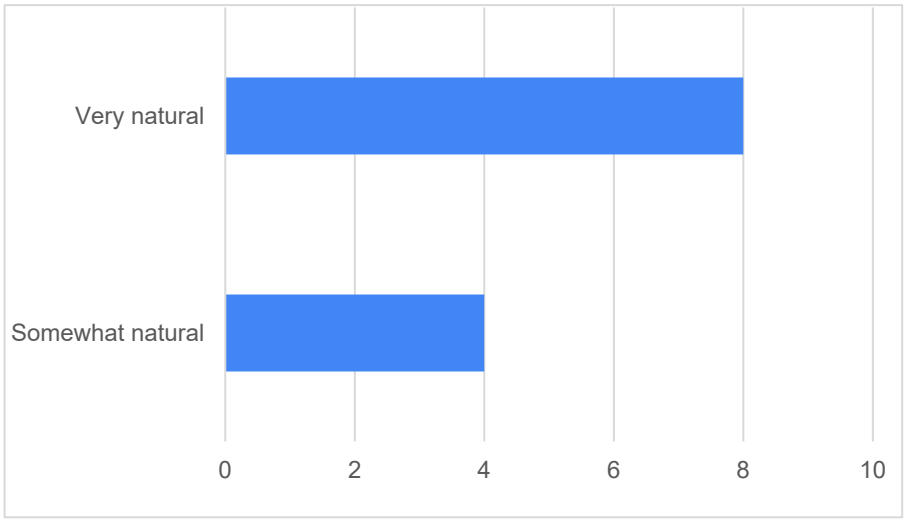


Figure 14: Perceived Naturalness of Speaking After Practicing with ChatGPT's Suggestions

After using ChatGPT's suggestions, the data shows a strong positive perception of naturalness in speaking. Eight of the respondents felt their speaking was 'Very natural', indicating the effectiveness of the AI in enhancing delivery. However, (4)of the responses were missing, limiting our perspective. Overall, for those who responded, ChatGPT significantly improved the fluency and authenticity of their spoken presentations, despite the missing data.

Item 9. *Recommendation to Use ChatGPT*

Confidence level	total
Maybe	**3**
Yes	**8**
No	**1**

Table 11: Total of Recommendations to Other Students to Use ChatGPT

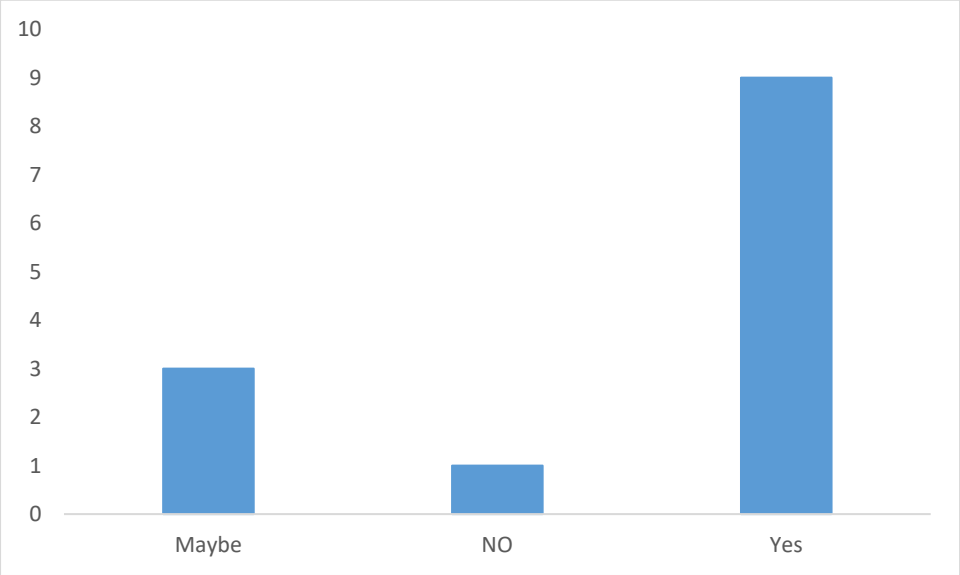


Figure 15: Participants' Recommendation to Other Students to Use ChatGPT

The data indicates a strong tendency to recommend ChatGPT for writing and speaking tasks, with eight responders affirming its utility. However, 3 of the responses showed a probability of using ChatGPT for other students, limiting the representativeness of the results. Overall, among those who responded, there is evident satisfaction with ChatGPT for language learning tasks.

3.4.3.1 Qualitative analysis for open-ended questions:

Theme 1: ChatGPT as a stimulus for Efficiency and Linguistic and Structural Refinement

This theme reflects the general view that ChatGPT significantly improves the effectiveness and quality of language acquisition activities by assisting with idea generation and enhancing the language and structural aspects of written and spoken communication. Answering various questions, respondents underscored the ability of the AI to make their work more efficient while enhancing the proficiency and coherence of their expressions.

Illustrative Quotes :

- "One of the benefits I noticed while preparing the speaking task with ChatGPT is the speed of generating ideas."
- "By giving ideas and fixing mistakes."
- "The most useful feature of ChatGPT is the speed of answering."

- "It helped me structure my points and use more academic vocabulary when explaining my opinions."
- "Rewriting sentences to make them clearer."

Theme 2: Balancing Utility with Authenticity and Ethical Responsibility

This topic reflects the challenges and issues users face while using ChatGPT, particularly about maintaining their voice, controlling the output of the AI (e.g., verbosity and unnatural wording), and the ethical use of the AI in academic settings. Participants recognized the software's benefits but also revealed concerns over original work and misuse should the technology be used recklessly.

- **Illustrative Quotes:**
  - "Lack of personal style when we depend only on ChatGPT."
  - "Sometimes, ChatGPT gave too many suggestions or used complex vocabulary that I needed to simplify to match my level of English."
  - "Yes, using AI to generate content for writing assignments can be considered academic misconduct if it's presented as the student's own work without proper acknowledgment."
  - "Yes, ChatGPT can be used ethically if I use it to get ideas, check grammar, or learn. I must not copy everything and must do my own thinking and writing."
  - "ChatGPT can help by offering ideas, improving clarity, and correcting grammar. However, it can be hindered by encouraging overreliance, reducing originality, and potentially leading to plagiarism if not used ethically."

3.4 Discussion of Findings:

The main findings of the study with respect to the research questions, the theoretical underpinning, and the literature of Chapters One and Two are presented in this chapter. Thematic analysis with MAXQDA24 supports the thematic reporting on the experience and perception of Mohamed Khider University of Biskra third-year English as a Foreign Language (EFL) learners on the use of ChatGPT in Mobile-Assisted Language Learning (MALL) contexts, in the case of productive vocabulary learning. The findings support the pedagogical value of ChatGPT but witness significant setbacks in the form of learners' overreliance and low levels of ethical consciousness.

3.4.1 Lexical enrichment and Vocabulary:

Among the notable themes that emerged is the utility of ChatGPT for heightening the lexis available to learners. Participants had stated that the tool made learning of contextually meaningful

and academically advanced lexis easier for speaking and writing activities. The experience fits Nation's (2001, 2005) model of lexis acquisition grounded on the integration of form, meaning, and use in the process of learning lexis. The tool stood out as an advantageous medium for employing innovative lexis in task-oriented contexts, thus witnessing the evidence of Swain's (1993) Output Hypothesis in support of the priority of production in the process of acquisition. The study validates that ChatGPT enables the lexis depth and lexis span, especially in formalized and academic forms of language such as argumentative writing and oral presentation.

3.4.2 Improved Structure and Cohesion of Written Production:

Of particular note here is the enhancement of the textual organization of written work when the students made use of ChatGPT. The learners exhibited increased organization in the coordination of ideas, the formation of well-integrated argument, and the establishment of logical relationships. These results support Laufer's (2013) assertions that productive vocabulary must be taught together with rhetorical and syntactic structure. ChatGPT not only worked as a tool for the provision of lexis but was equally a scaffolding tool for improved textual management in the performance of well-organized written work.

3.4.3 Increased Speech Fluency and Confidence:

At the level of oral performance, the learners expressed enhanced confidence and facility with ChatGPT usage when preparing for speaking. The tool served as a rehearsal partner, giving the student various options of words and sentences to memorize and practice. The findings concur with those of existing research (Wang & Lin, 2024; Lo et al., 2024), citing support of AI-created conversation on the topic of spoken fluency. Respondents identified, though, the constraints of ChatGPT for conversational behaviour simulation, i.e., its inability to replicate prosodic, non-verbal, and cultural markers of real-time spoken communication.

3.4.4 Learner engagement and individualized feedback:

Students revealed that instant and adaptive feedback by ChatGPT assisted and enriched the learning process because they could revise and enhance the application of lexis in speaking and writing assignments. This resonates with the work of Bai et al. (2023) and Lu and Sun (2022), which determined that AI feedback assists with the accuracy of lexis and self-correction. Despite such advantages, learners admitted to accepting AI recommendations without critical examination, an issue of concern with passive learning and neglect of contextual and cultural appropriacy.

7.4.5 Ethical Awareness:

While ChatGPT itself was largely perceived in a positive manner, one of the major issues raised by participants was overreliance on AI-generated text. Participants admitted accepting ChatGPT's suggestions with minimal effort or thought on their part. This replicates Abduljawad's (2025) warning on the threat of diminished learner agency for AI-environment contexts. As highlighted in the AIAS model (Roe et al., 2025), educators must place greater emphasis on responsible use, critical engagement, and human-AI collaborative work rather than replacement. Findings emphasize the incorporation of AI literacy and reflective pedagogical practice in language instruction.

3.4.6 Contribution to the Discipline and Alignment with Literature:

The findings of the current study concur with existing literature on the benefits of AI in second language acquisition (e. g., Ziegler et al., 2023; Huang & Zhang, 2023), albeit in relation to the acquisition of vocabulary. However, the current study not only shares the strengths of investigating the less explored aspect of productive vocabulary learning compared to the receptive competence, but the study puts forward a regional perspective from the Algerian EFL context that has not yet attracted significant attention in the research on AI-facilitated language learning. 3.4.7 Bridging the Research Gap The study bridges an important gap in the current literature by investigating the degree to which ChatGPT, being an AI-facilitated MALL tool, contributes to productive vocabulary learning in real, classroom-based EFL teaching in Algeria. While previous studies on the topic have focused mostly on receptive vocabulary or general attitude towards AI, the study offers empirically grounded evidence of ChatGPT's utility in promoting speaking and writing through the mediation of support for vocabulary. It also offers the learners' impressions, the ethical implications, and the contextual viability of AI-assisted tools.

3.4.8 Summary of Discussion

In summary, the outcomes serve to demonstrate the potential of pedagogically incorporated ChatGPT in MALL contexts to aid productive vocabulary acquisition by EFL learners. The tool facilitates lexical enrichment, organizational structure of the discourse, and learner self-confidence. Furthermore, the study calls for critical usage, ethical awareness, and instructed facilitation to counter the dangers of passive over-reliance and to ensure independent learning. The findings have implications for course design, the training of instructors, and AI-based language teaching policy in the future.

3.5 Recommendations:

Based on the themes and student experience from learning and communicative interactions with ChatGPT throughout writing and speaking exercises under classroom conditions, the following recommendations are proposed for teaching practices, AI integration, and potential research for Mobile-Assisted Language Learning (MALL) contexts:

3.5.1 Integrate ChatGPT into Productive Vocabulary Instruction:

Given the positive impact that ChatGPT has had on students' vocabulary confidence and accuracy in writing and speaking skills, teachers are urged to apply this technology in classroom activities. It can serve as an enrichment tool for vocabulary in writing paragraphs, preparing for a discussion, and practicing rehearsals.

3.5.2 Promote Training in AI Literacy and Critical Evaluation:

Some of the participants were found to be heavily reliant upon ChatGPT, accepting its suggestions without a proper review. Teachers should incorporate brief modules or structures to strengthen students' critical skills while making use of AI resources, particularly for evaluating proposed words for their quality and pertinence.

3.5.3 Use ChatGPT as an assistive aid for speech assignment development:

As students expressed increased confidence and felt at ease when presenting orally after practice sessions using ChatGPT, teachers can develop pre-task speaking rehearsals that use AI chat interfaces. This scaffolding approach supports fluency and retrieval of words while speaking off the cuff.

3.5.4 Ensure Use of Appropriate Cultural Terminology:

Some students raised concerns about vocabulary introduced by ChatGPT that was culturally insensitive or unknown to them. Teachers need to supervise and guide students when grading AI content to ensure that the vocabulary used is contextually and culturally relevant. 5. Encourage Reflective Writing and Use of Meta-Cognitive Vocabulary. Students must be encouraged to reflect upon the grounds for accepting or rejecting vocabulary suggestions from ChatGPT to achieve higher learning results. This goal can be assisted through post-task journaling or evaluation to enhance lexical development.

Conclusion

Finally, this chapter explained the research methodology adopted in this study, which conforms to a qualitative and exploratory case study aligned with an interpretivist approach. This study is pragmatically oriented and targets specifically a cohort of third-year English as a Foreign

Language (EFL) students learning at Biskra University, analyzing to what extent ChatGPT-mediated speaking and writing exercises benefit productive vocabulary development in a Mobile-Assisted Language Learning (MALL) environment.

Data were collected using two complementary methods: productive vocabulary activities in classroom environments (both written and verbal) and open-ended questionnaires to identify students' personal experience and understanding of ChatGPT. The primary methodology for analyzing collected data was thematic analysis, which allowed for common themes and findings across different learners to be identified. Systematic coding and theme building were executed using MAXQDA24, enhancing transparency and validity in the analysis process.

The chosen methodology ensures that the study is grounded in real classrooms, focused on student participation, contextual understanding, and learning put into practice. The next chapter explains and dissects the overall findings from the data, presenting the nature of students' interactions with ChatGPT and implications for improving productive vocabulary use in writing and speech.

General conclusion

The research explored the learning potential offered by ChatGPT for Mobile-Assisted Language Learning (MALL) purposes, targeting productive vocabulary learning among third-year English as a Foreign Language (EFL) students at Mohamed Khider University of Biskra. A qualitative, interpretivist approach was applied in an experimentally oriented case study methodology. It examined students' use of ChatGPT while practicing speaking and writing skills in classroom settings, and how these interactions affected their lexical development in honest academic discourse.

Data were collected using two primary instruments: open-ended questionnaires and chat-based language production integrated into classroom instruction. The instruments produced meaningful contextual insights into students' attitudes, learning styles, and use of ChatGPT. The findings, which were accessed through thematic analysis, came up with several themes relevant to teaching practices. Every student demonstrated increased vocabulary confidence, accuracy, and precision in choosing words, and enhanced motivation in speech and writing activities promoted through ChatGPT's interactive prompt abilities.

Furthermore, the study emphasized the importance of ChatGPT as a personalized linguistic support system, helping students refine vocabulary choices concerning contextual and audience considerations. This aligns well with constructivist models for language learning, which focus upon learner autonomy and meaning construction in context. Many respondents appreciated that the tool allowed for deeper reflection about vocabulary use, prompted reflection and correction, and aided in integrating new items into vocabulary through ongoing use.

The study found a variety of limitations and potential risks associated with integrating artificial intelligence into learning environments. Some students were found to tend to rely solely upon AI-based recommendations, using vocabulary without proper critical evaluation. A few respondents mentioned difficulty in determining contextual and cultural suitability for terms offered by ChatGPT, and therefore, the importance of integrating AI literacy as an extra teaching component. Those concerns highlight the importance of placing such devices within prevailing education frameworks that support critical evaluation, metacognitive awareness, and teacher guidance.

Based on a sound theoretical framework, this study adds to a growing body of research exploring the impact of Artificial Intelligence upon Second Language Acquisition (SLA). This study supports the view that generative AI technology, when implemented adequately within

environments for Mobile-Assisted Language Learning (MALL) in institutional contexts can be an effective scaffolding instrument for productive vocabulary development, particularly for

certain language activities undertaken by students. Thus, this study offers evidence-based solutions for syllabus designers, instructor educators, and teachers who aim to incorporate AI technology into pedagogically sound and learner-centered ways.

Despite these strengths, there are certain limitations in the research work. The study was restricted to a small, intentionally picked population from one single organization, which could compromise the findings' applicability and generalizability. Second, reliance upon self-reported measures and qualitative methods, which fit nicely into an interpretivist paradigm, exposes the findings and researcher responses to biases and subjectivity. While triangulation was utilized to build credibility in such a study, future research would benefit from applying mixed-methods designs and incorporating quantitative analyses of learner development and learner views.

Regarding potential areas for research, further studies need to investigate the long-term consequences of vocabulary learning through ChatGPT, including retention, transfer, and impact on higher-order linguistic abilities like fluency and discourse coherence. Comparative investigations across various learning contexts, skill levels, and curricular designs can provide insights into the flexibility and effectiveness of such artificial intelligence platforms. Interdisciplinary collaboration between applied linguists, educators, and AI developers is crucial for nurturing AI engines better suited to students' linguistic, cognitive, and culturally relevant needs.

In conclusion, this research underscores the pedagogical value of integrating ChatGPT into EFL classrooms, particularly when used to support productive vocabulary through structured, classroom-based writing and speaking tasks. It affirms the potential of AI tools to enhance learner autonomy, support vocabulary growth, and promote reflective language use, while also cautioning that such integration must be guided, critical, and context-aware. As digital technologies continue to reshape language education, this study contributes to an evolving dialogue on how AI can be responsibly and meaningfully embedded into foreign language pedagogy.

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Appendices

Appendix A: The writing and speaking task

Appendix B: The questionnaire

Appendix C: Codebook of Writing Task Paragraphs

Appendix D: Codebook of Speaking Task Paragraphs

Appendix E: Codebook of ChatGPT Conversations (Writing task)

Appendix F: Codebook of ChatGPT Conversations (speaking task)

Appendix A: The writing and speaking task

People's Democratic Republic of
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Exploring the Role of ChatGPT in Mobile-Assisted Language Learning (MALL) for Enhancing Productive Vocabulary Use among Third-Year EFL Students at Biskra University

Student Researcher

Adouani Wissal

Supervisor

Dr. Ilham TIGANE

Participants Consent form

The goal of this research is to explore how third-year EFL students at Biskra University utilize ChatGPT as a mobile-assisted language learning (MALL) tool to enhance their productive vocabulary (in writing and speaking). The study uses classroom tasks to gather information into students' learning experiences.

What Participation Involves:

If you agree to take part in this study, you will:

- Complete a short writing or speaking task.
- Use ChatGPT as a language learning tool during the task.
- Reflect briefly on your experience with ChatGPT.
- Submit your final task and screenshots or notes from your ChatGPT session.
- This is not a graded assignment, and your participation is for research purposes only.

Voluntary Participation & Confidentiality:

- Your participation is completely voluntary.
- You may withdraw from the study at any time without penalty.
- All information you provide will be treated confidentially.
- Your name will not appear in any report or publication.

Consent Statement

I have read and understood the purpose and procedures of this research study. I voluntarily agree to participate and allow my responses and tasks to be used anonymously for academic research purposes.

Participant Name: ……

Signature:

Date: / 04/2025.

Writing Task

Title: The Dark Side of Fast Fashion: The Environmental Cost of Cheap Clothes

Write a short opinion paragraph (100–200 words) answering:

"Do you think buying cheap, trendy clothes is harmful to the environment? Should people change how they shop for clothes?"

Explain your opinion using simple reasons and examples.

1. Use ChatGPT to help you:
    - Generate ideas or arguments
    - Correct or improve sentence structure
    - Ask for feedback on your draft
2. Before writing:
    - Ask ChatGPT for relevant vocabulary, collocations, or phrases.
    - Use ChatGPT to brainstorm ideas.
3. After writing:
    - Submit both:
        - Your final paragraph
        - A screenshot or copy of the chat(s) with ChatGPT that you used during the writing process.

The paragraph

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Speaking Task

Title: Food Waste: An Invisible Environmental Crisis

Instructions for Students:

You will prepare and record a **2–3 minute spoken presentation** on the following topic: "Many people throw away food every day. Why is food waste a serious problem, and how can students help reduce it?"

1. Use ChatGPT to:
    - Generate an outline for the topic not the structure of the spoken presentation
    - Ask for vocabulary or expressions related to your ideas
    - Try to improve your script using chat GPT improve sentences
2. Prepare a short script (you can memorize or speak freely).
3. Submit the following:
    - A recording of your spoken presentation (audio or video).
    - The notes or script you created with ChatGPT.
    - A screenshot or copy of your interactions with ChatGPT.

The script

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Appendix B: The questionnaire

Research Questionnaire

please read the information below before starting to felling out the questionnaire

Research title:

Exploring the role of ChatGPT as mobile-assisted language learning in enhancing the productive vocabulary among third-year students at the University of Biskra.

Purpose of the study:

The primary aim of this study is to investigate how ChatGPT, as a Mobile-Assisted Language Learning (MALL) tool, can contribute to the enhancement of productive vocabulary acquisition among third-year EFL students at the University of Biskra. The research seeks to explore learners' engagement with ChatGPT in both writing and speaking contexts and examine the educational implications of AI-based support for vocabulary development.

Role of the participants:

Participants are kindly requested to complete the questionnaire by answering all items carefully and honestly. The questionnaire includes reflections on vocabulary-based tasks completed using ChatGPT. Participants should respond based on their personal experience and perception of how these tasks influenced their learning, especially in terms of productive vocabulary acquisition. Their input is essential for understanding the educational value of ChatGPT in language learning.

Recruitment of the study:

Only third-year English department students from **the University of Biskra** are eligible to participate. Interested students will be invited to fill out a consent form and complete the online questionnaire or engage in structured activities involving ChatGPT.

Anonymity and confidentiality:

All personal information and responses collected during the study will remain strictly confidential. Participants' identities will not be disclosed at any stage of the research process. Pseudonyms or codes will be used to refer to participants in any report, publication, or presentation resulting from this study to ensure complete anonymity.

Storing and using data:

All collected data will be securely stored in password-protected digital files accessible only to the researcher and academic supervisor. The data will be used solely for academic purposes related to this study, including the dissertation and possible academic publications. After a retention period of one year post-submission, all data will be permanently deleted in accordance with ethical research guidelines.

Researcher: Adouani wissal
Affiliation: department of English, university of biskra
Email: adouaniwissal1118@gmail.com
Phone: 0794215390

* Indique une question obligatoire

Section one
general experience with ChatGPT

1. How comfortable did you feel using ChatGPT for the tasks? *

- [ ] Very comfortable
- [ ] Comfortable
- [ ] Neutral
- [ ] Uncomfortable
- [ ] Very uncomfortable

2. Overall, how helpful was ChatGPT in supporting your language learning during these tasks? *

- [ ] Very helpful
- [ ] Helpful
- [ ] Neutral
- [ ] Slightly helpful
- [ ] Not helpful

3. How did ChatGPT assist you in preparing your opinion paragraph? *
(You may select more than one option.)

- ◯ Provided vocabulary or collocations
- ◯ Helped brainstorm ideas
- ◯ Corrected grammar and structure
- ◯ Suggested better sentence organization
- ◯ Autre : _____

4. How much do you feel your final paragraph improved after using ChatGPT? *

- ◯ Improved a lot
- ◯ Improved somewhat
- ◯ No significant improvement

5. In your opinion, did using ChatGPT enhance your ability to express your ideas clearly in writing? *

- [ ] Yes
- [ ] No
- [ ] Not sure

6. Please briefly describe one challenge you faced while using ChatGPT for the writing task. *

Votre réponse

Section three

Reflection of ChatGPT on Speaking

7. How did ChatGPT support your preparation for the speaking task? *
(You may select more than one option.)

- [ ] Helped generate main ideas
- [ ] Suggested vocabulary and expressions
- [ ] Improved sentence structure
- [ ] Helped organize the flow of ideas
- [ ] Autre : _____

8. After using ChatGPT, did you feel more confident when recording your spoken presentation? *

- [ ] Yes
- [ ] No
- [ ] Not sure

9. How natural did your speaking feel after practicing with ChatGPT's suggestions? *

- [ ] Very natural
- [ ] Somewhat natural
- [ ] Not natural

10. Please briefly describe one benefit you noticed while preparing the speaking task with ChatGPT *

Votre réponse

Section four

Attitudes Toward ChatGPT in Language Learning

11. How can ChatGPT help and hinder you in writing and editing work you submit? *

Votre réponse

12. Do you think using AI to generate content for writing assignments is considered academic misconduct? Please explain your reasoning. *

Votre réponse

13. Do you think ChatGPT and other generative AI can be ethically used in academic writing? If so, under what conditions? *

Votre réponse

14. What is your experience incorporating ChatGPT into the academic writing process?

Votre réponse

15. What was the most useful feature of ChatGPT for these tasks? *

Votre réponse

16. What would you improve or change about using ChatGPT for future language learning activities? *

Votre réponse

17. Would you recommend using ChatGPT to other students to help with writing and speaking tasks? *

- [ ] Yes
- [ ] No
- [ ] Maybe

18. Additional comments? *

Votre réponse

Thank you!

Obtenir le lien

Page 1 sur 1

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Google Forms

Appendix C: Codebook of Writing Task Paragraphs

code	Memo	total
similar paragraphs	"Same ideas, sentences, form, tone, and illustrations!"	1
replication by AI-Tool	ChatGPT suggested the same statements	9
Repetitions	Repetitive terms assure that the AI tool is only for assistance	1
contextual vocabulary	Reference to social groups (most people, especially girls)	1
Discourse marker vocabulary	"Expression of personal opinion (I think, you can say)"	1
expressing personal identity	"express, individuality, preferences) — productive vocabulary"	5
Use of external authoritative sources	"Indicates that the learner refers to academic-like sources, possibly reflecting the influence of ChatGPT in encouraging	5

supported
discourse"

Appendix D: Codebook of Speaking Task Paragraphs

code	Memo	total
out of the topic provided	the participant went out of the topic provided	1
"Use of Simplified, AI-Inspired Vocabulary"	Access to science-based language—AI-assisted likely	3
repeated expressions	repeating same sentences that may chat gpt provided	3
Compression of Ideas	Rapid listing—could be AI-summarized content	3
AI-influenced Phrasing	Likely artificial structure—odd phrase indicates overextension	1
Repetition for Emphasis	Possible overreliance on phrasing—maybe copied from ChatGPT	1

persuasion thoughts from cultural or religious background	"the sample used her general background, to evidence and persuade"	6
misunderstood of the instructions	the lack of understanding the task instruction led to the confusion of the sample	1

Appendix E: Codebook of ChatGPT Conversations (Writing task)

code	Memo	total
Lack of creativity in asking	asking the chat gpt to provide them with every detail without elaborating and being creative	4
contextuality of the vocabulary	The vocabulary provided is related to the context provided by the students	7
access to a variety of productive vocabulary	Availability of productive vocabulary by ChatGPT to use	5
assistance and simplification in the writing process	Students have different linguistic patterns to write by to illustrate	10
AI dependency	The full use of ChatGPT in writing	10
Knowledge Structuring	"Thematic categorisation (personal, cultural, trendy, artistic)."	4

AI-Assisted Concept Elaboration	ChatGPT expands the meaning beyond a dictionary definition.	5
Lexical Scaffolding	Providing definitions and categories to build semantic understanding.	1
Lexical Chunking & Collocation	The very first conversations included the same vocabulary, collocations, and brainstormed ideas that had been generated by AI	1

Appendix F: Codebook of ChatGPT Conversations (speaking task)

code	Memo	total
Task Initiation	The student's initial prompt introduces the speaking task and requests general information or assistance to begin.	12
Outline Generation Request	The student's prompt specifically asks ChatGPT to generate an outline for the presentation.	4
Vocabulary/Expression Request	The student's prompt asks ChatGPT to provide vocabulary, phrases, or expressions related to the topic of food waste.	12
Script Improvement Request	The student's prompt asks ChatGPT to improve, revise, or refine a previously written presentation script.	1

Specific Information Request	The student's prompt seeks specific information, explanations, or details about food waste.	8
Vocabulary/Expression List	ChatGPT's response provides lists of vocabulary, phrases, or expressions.	10
Explanation/Information Provision	ChatGPT's response provides explanations, definitions, or factual information about food waste.	2
Positive Feedback/Confirmation	ChatGPT's response expresses agreement, provides encouragement, or confirms understanding.	1
Script Improvement Suggestions	ChatGPT's response offers suggestions or advice on how to improve the student's presentation	

script.

ملخص

يهدف هذا البحث إلى دراسة دور أداة "تشات جي بي تي(ChatGPT) "، وهي نموذج لغوي مدعوم بالذكاء الاصطناعي، في تعزيز اكتساب المفردات المنتجة لدى طلبة السنة الثالثة من قسم اللغة الإنجليزية كلغة أجنبية بجامعة محمد خيضر – بسكرة. تم إجراء الدراسة في إطار المنهج التفسيري من خلال تصميم دراسة حالة نوعية تركّز على الممارسات الصفية، حيث تفاعَل الطلبة مع ChatGPTأثناء أداء مهام إنتاجية كتابية وشفوية مدمجة ضمن بيئة تعليم اللغة عبر الأجهزة المحمولة(MALL)

تم جمع البيانات من خلال استبيانات مفتوحة النهايات ومهام لغوية صفّية تهدف إلى قياس استخدام المفردات. أُجري تحليل موضوعاتي باستخدام برنامجMAXQDA24 ، وكشف عن أن الطلبة يعتبرون ChatGPT أداة مساعدة تسهم في تعزيز الثقة اللغوية، والدقة في اختيار الكلمات، وزيادة الدافعية للمشاركة في الأنشطة اللغوية. كما بيّن التحليل أن الأداة توفّر تغذية راجعة فردية وفعّالة تدعم تطوير المفردات في سياقات أكاديمية حقيقية. ومع ذلك، أظهرت النتائج بعض التحديات، مثل الاعتماد المفرط على الأداة، وضعف التقييم النقدي للمخرجات اللغوية، ووجود اقتراحات لغوية غير مناسبة ثقافياً أو سياقياً أحياناً.

استنتجت الدراسة إلى أن دمج ChatGPT في التعليم الصفي، إذا تم بطريقة واعية ومنظّمة، يمكن أن يقدّم قيمة تربوية كبيرة في دعم تعلم المفردات المنتجة لدى متعلمي اللغة الإنجليزية كلغة أجنبية. كما تقدم هذه الدراسة توصيات تربوية واقتراحات للبحوث المستقبلية في مجال تعليم اللغات المدعوم بالذكاء الاصطناعي