Examining the impact of vocabulary size on listening abilities among Moroccan second year baccalaureate students

Imad Hamdanat[1]

PHD student at Moulay Ismail University

Abstract

This correlational study investigates the relationship between vocabulary size and listening abilities among Moroccan high school students, specifically focusing on 90 second year Baccalaureate students from Almansour Addahbi High School in Sidi Kacem, Morocco. Data were collected through standardized vocabulary size and listening proficiency tests, and statistical analyses were performed using Pearson correlation and regression analysis. The results revealed a significant positive correlation ($r = 0.827$, $p < 0.01$) between vocabulary and listening skills, indicating that students with larger vocabulary sizes tend to exhibit higher listening scores. Regression analysis further supported the findings, showing that vocabulary significantly predicted listening abilities (Beta = 0.827, $p < 0.01$). These findings emphasize the critical role of vocabulary knowledge in enhancing listening comprehension among second year Baccalaureate students, with implications for language education strategies.

1. Introduction

Language proficiency is a multifaceted construct encompassing various language skills, including vocabulary knowledge and listening ability (Hamdanat, 2024). As language learners progress, their proficiency in these skills plays a pivotal role in their overall language comprehension and communication competence (El Jemli, Serhani, Hamdanat, & Azzouzi, 2024). Understanding the relationship between vocabulary size and listening ability is of utmost importance in language education, as it sheds light on how these two key components interconnect and contribute to successful language learning.

This quantitative research aims to investigate the relationship between vocabulary size and listening ability among Moroccan high school students, specifically focusing on students in Sidi Kacem, Morocco. Proficiency tests

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[1] Mr. Imad Hamdanat is a high school English teacher and a doctoral candidate in Applied Linguistics at Moulay Ismail University, Meknes. He earned his Master's degree in Applied Language Studies from the same institution in 2021. As a member of the Soft Skills Community, he has actively participated in numerous national and international conferences. His research interests include Teaching English as a Foreign Language (TEFL), soft skills studies, and language development, with a specialization in soft skills development. Contact: i.hamdanat@edu.umi.ac.ma

were employed as the primary data collection method, ensuring objective and reliable measurement of language proficiency.

1.1. Background and Rationale

The study of language proficiency and its constituent skills is of great significance in second language acquisition research. While vocabulary knowledge is central to understanding and expressing meaning, listening ability serves as a fundamental channel through which learners comprehend spoken language in various contexts. Ascertaining the potential correlation between vocabulary size and listening ability can offer insights into the cognitive processes underlying language comprehension and highlight areas for pedagogical improvement.

1.2. Statement of the Problem

Despite the acknowledged importance of both vocabulary and listening ability in language learning, there is a gap in research concerning the relationship between these two aspects among Moroccan high school students. By investigating this relationship through a quantitative approach that relies on proficiency tests, this study seeks to address this gap and contributes valuable knowledge to the field of language education.

1.3. Research Objectives

The primary objective of this study is to explore the potential relationship between vocabulary size and listening ability among Moroccan high school students. The specific aims are as follows: 1. To assess the vocabulary size of the participants using a standardized vocabulary test. 2. To measure the listening ability of the participants through a reliable listening test. 3. To examine the correlation between vocabulary size and listening ability among the participants.

1.4. Research Question and hypotheses

In line with the objectives of this study, the following research question and hypotheses were formulated to guide the investigation into the relationship between vocabulary size and listening ability among Moroccan 2nd-year baccalaureate students.

1.4.1. Research question

RQ: Is there a significant correlation between vocabulary size and listening ability among Moroccan 2nd-year baccalaureate students?

1.4.2. Hypotheses

To provide a clear framework for testing the research question, both a directional hypothesis and a null hypothesis were developed. These hypotheses serve as testable statements that will be examined through statistical analysis:

DH: There is a significant positive correlation between vocabulary size and listening ability among Moroccan 2nd-year baccalaureate students.

NH: There is no significant correlation between vocabulary size and listening ability among Moroccan 2nd-year baccalaureate students.

1.5.   Significance of the Study

This research holds several implications for language educators, curriculum designers, and researchers. By identifying the potential relationship between vocabulary and listening ability, language instructors can better design effective instructional strategies that foster both skills simultaneously, enhancing language learners' overall language competence. Additionally, the findings of this study can contribute to the existing body of knowledge on language proficiency and serve as a reference for future research in the field of second language acquisition.

1.6.   Literature review

The relationship between vocabulary size and listening ability is a complex and multifaceted area of language learning research (Aoiz Pinillos, 2021). Understanding this relationship is crucial for educators and learners alike, as it provides insights into effective language teaching and learning strategies. While numerous studies have explored this connection in various contexts, there is a dearth of research specifically examining the relationship between vocabulary size and listening abilities among Moroccan high school students (Hamdanat, 2023). This literature review aims to address this gap by synthesizing existing research on the topic and exploring its implications for Moroccan language education.

1.6.1. Theoretical Framework

This study on the relationship between vocabulary size and listening abilities among Moroccan baccalaureate students is anchored in three primary theoretical frameworks: the Lexical Quality Hypothesis, the Input Hypothesis, and Cognitive Load Theory. Each framework offers critical insights into how vocabulary affects listening comprehension, providing a comprehensive understanding of the dynamics at play.

1.6.2. Lexical Quality Hypothesis

The Lexical Quality Hypothesis, proposed by Perfetti (2007), posits that the quality of a learner's vocabulary knowledge significantly influences various language skills, including listening comprehension. This hypothesis emphasizes two main dimensions of vocabulary knowledge: breadth, which refers to the size of the vocabulary (the number of words known), and depth, which pertains to the richness and complexity of understanding those words (e.g., their meanings, usage, and associations). Research supports this framework by demonstrating that a robust vocabulary facilitates language processing and comprehension (Perfetti & Hart, 2002; Stæhr, 2009).

For instance, a study by Zhang and Zhao (2021) highlighted that both vocabulary breadth and depth positively impact L2 listening proficiency, signifying that learners with a well-rounded vocabulary struggle less in comprehending spoken discourse. This framework will be utilized in the current study to explore how variations in vocabulary size among students may directly influence their performance in listening tasks, effectively linking lexical knowledge to listening skills.

1.6.3. Input Hypothesis

Krashen's Input Hypothesis (1985) posits that language acquisition occurs most effectively when learners are exposed to comprehensible input that is slightly beyond their current level of competence, denoted as "i+1." This hypothesis underscores the role of input in developing listening and other language skills, suggesting that a substantial vocabulary allows learners to engage more fully with this input.

Research has shown that learners with a broader vocabulary are better equipped to understand and process spoken language, as they can derive meaning from context and fill in gaps when encountering unfamiliar terms (Krashen, 1985; Van Zeeland, 2014). This framework is particularly relevant for this study as it allows for the exploration of how students' vocabulary knowledge impacts their ability to process and comprehend auditory information in a second language. Moreover, studies suggest that effective vocabulary instruction can enhance the quality of input, subsequently improving listening comprehension (Hamdanat, 2023).

1.6.4. Cognitive Load Theory

Cognitive Load Theory, developed by Sweller (1988), examines how limitations in working memory capacity affect learning and comprehension. When learners encounter material that exceeds their cognitive capacity, it can hinder their ability to process information effectively. In the context of listening comprehension, students with limited vocabulary may experience higher cognitive load, as they need to expend additional cognitive resources on decoding individual words rather than focusing on overall comprehension of the message (Paas & Sweller, 2014).

Research has indicated that a richer vocabulary reduces cognitive load, enabling learners to comprehend spoken texts more efficiently (Taguchi & Roever, 2017). This theoretical framework will support the investigation of how vocabulary size mitigates cognitive load during listening tasks, allowing students to allocate their cognitive resources more effectively and thereby enhance their comprehension skills.

In a nutshell, by leveraging the Lexical Quality Hypothesis, the Input Hypothesis, and Cognitive Load Theory, this study will provide a rigorous examination of the relationship between vocabulary size and listening abilities among second-year baccalaureate students in Morocco. Each framework offers valuable insights into the mechanisms underlying vocabulary influence on listening comprehension, addressing crucial aspects of language learning and acquisition. As a result, this research not only contributes to the academic discourse on vocabulary and listening but also provides pragmatic implications for language instruction and curriculum design.

1.7. Vocabulary Size and Language Learning

Vocabulary size, encompassing both receptive and productive knowledge, serves as the foundation of language proficiency (Nation, 2001). It refers to the total number of words that an individual both understands and can actively use within a specific language context. Extensive research consistently underscores the critical role of vocabulary in language learning,

influencing all facets of communication, including comprehension, production, and overall communicative competence (Nation, 1990).

Laufer and Goldstein (2004) further emphasize vocabulary size's importance in language testing and assessment, indicating that it reflects a learner's ability to effectively understand and utilize language. Studies have repeatedly demonstrated a strong positive correlation between vocabulary size and language proficiency. For instance, Nation (2001) conducted comprehensive research on vocabulary acquisition in second language contexts, revealing that a larger vocabulary directly enhances reading fluency, listening comprehension, and speaking accuracy. In addition, Nation (2006) explored the vocabulary size necessary for effective reading and listening, concluding that improvements in comprehension abilities are significantly associated with a larger vocabulary. These findings are notably corroborated by Adolphs and Schmitt (2003), who examined lexical coverage in spoken discourse and established a clear connection between vocabulary knowledge and understanding spoken language.

Recent studies, such as those by Van Zeeland and Schmitt (2012), further contribute to this discourse by comparing lexical coverage in first language (L1) and second language (L2) listening comprehension. Their research suggests that vocabulary knowledge similarly influences comprehension abilities across both languages, reinforcing the notion that vocabulary is a universal determinant of language proficiency. Taken together, these studies highlight that a robust vocabulary not only supports successful communication but is also indicative of overall language proficiency, underscoring the necessity of vocabulary instruction in language learning.

1.8.   Theories of Vocabulary Acquisition

Several theories seek to explain the processes underlying vocabulary acquisition and their implications for language learning. The Incidental Learning Hypothesis, proposed by Nation (1990), suggests that vocabulary can be acquired unintentionally through exposure to language in everyday contexts. Learners may pick up new words by engaging with written texts, listening to conversations, or watching media. This notion is supported by the findings of Nouri and Zerhouni (2016), who investigated the relationship between vocabulary knowledge and reading comprehension among Moroccan EFL learners. Their research underscores that incidental exposure through reading significantly contributes to vocabulary development and, consequently, enhances reading comprehension.

However, while incidental learning plays a vital role in vocabulary acquisition, it may not suffice for significant vocabulary growth alone. To address this limitation, the Deliberate Learning Hypothesis—championed by Schmitt (2010)—highlights the necessity of intentional and systematic vocabulary study. This approach includes techniques such as employing flashcards, engaging in targeted vocabulary practices, or utilizing explicit teaching methodologies. Schmitt (2010) asserts that deliberate efforts are crucial to supplement incidental learning, thereby maximizing vocabulary acquisition and ensuring a more comprehensive understanding of language.

By understanding the interplay between incidental and deliberate vocabulary acquisition, educators and learners can prioritize effective vocabulary development strategies, ultimately leading to enhanced communication skills and improved language proficiency. This theoretical framework lays the groundwork for further exploration of how vocabulary size directly impacts listening abilities in learners.

1.9.   *Listening Ability and its Components*

Listening is an inherently multifaceted skill, encompassing various psycholinguistic abilities, processes, subskills, and knowledge sources (Rost, 2011). Purdy (1997) defined listening as "the active and dynamic process of attending, perceiving, interpreting, remembering, and responding to the expressed (verbal and nonverbal) needs, concerns, and information offered by other human beings." This definition underscores the complexity of listening as a process that goes beyond mere auditory perception.

Vandergrift and Goh (2012) provide a comprehensive analysis of second language (L2) listening comprehension, delineating four primary cognitive processes: (1) controlled and automatic processing, (2) perception, parsing, and utilization, (3) metacognition, and (4) top-down and bottom-up processing. They emphasize the significance of both linguistic knowledge (such as phonological and vocabulary knowledge) and prior knowledge (including background and pragmatic knowledge) for effective listening.

The distinction between automatic and controlled processing pertains to the speed and accuracy with which language learners access the knowledge needed to interpret auditory texts. The transient nature of auditory input presents a unique challenge, as it necessitates near-instantaneous processing of information. Research highlights that a high degree of automaticity in processing acoustic input is crucial, allowing cognitive resources to be devoted to higher-level interpretations (Field, 2009; Hulstijn, 2003). Generally, proficient L2 listeners exhibit automation in various listening processes, enabling them to concentrate on broader meanings (Field, 2009).

The framework encompassing perception, parsing, and utilization is grounded in Anderson's (2020) model of listening comprehension, which is extensively cited in L2 research (Zhang, 2018). During the perception phase, listeners engage in bottom-up processing to identify sounds and create a phonetic representation. This representation is subsequently parsed to identify potential word candidates using word-based cues (such as onset or salience) and meaning cues (such as context or topic) (van Zeeland, 2014). In the utilization phase, information from the perception and parsing stages is integrated with long-term memory, and it is important to note that these phases do not occur in a strictly sequential manner but interact reciprocally.

Metacognition involves learners' awareness of the cognitive processes occurring during listening and their ability to monitor, regulate, and manage these processes effectively. Successful listeners utilize metacognitive strategies to enhance their listening comprehension (Graham, Santos, & Vanderplank, 2008).

In L2 listening research, the distinction between bottom-up and top-down processing is frequently employed (van Zeeland, 2014). Bottom-up

processing focuses on linguistic elements such as sounds, phonemes, and word parts, requiring listeners to rely on real-time input (Graham & Santos, 2015; Rost, 2011). Conversely, top-down processing involves semantic and pragmatic processing, where higher-level cognitive processes construct tentative representations of the message, drawing on prior experiences and expectations (Rost, 2011).

Research indicates that bottom-up and top-down processes do not correspond to fixed processing levels but rather reflect the directional flow of processing. Bottom-up processes involve constructing larger structures from smaller, lower-level units, while top-down processes involve larger units influencing the perception of smaller ones (Field, 2009; Rost, 2006).

1.10.   Relationship Between Vocabulary Size and Listening Ability

While Quines (2023) did not find a significant correlation between vocabulary range and listening skills in students, a substantial body of research suggests otherwise. Empirical evidence consistently highlights a significant positive correlation between vocabulary size and listening ability. Learners with a larger vocabulary tend to exhibit superior listening comprehension skills (Milton, 2009; Wang & Treffers-Daller, 2017). For instance, Alderson (2005) found a correlation of .61 between vocabulary size and listening scores, indicating that vocabulary knowledge is a substantial predictor of listening proficiency. Further supporting this, Matthews and Cheng (2015) and Stæhr (2009) demonstrated that efficient vocabulary access is linked to better listening skills. This body of research underscores the critical role of vocabulary in enhancing listening comprehension, facilitating more effective recognition and understanding of spoken language.

Several factors influence the relationship between vocabulary size and listening ability. The context in which listening occurs—whether academic or conversational—can affect how vocabulary knowledge impacts comprehension. Effective listening also necessitates the ability to handle rapid connected speech and recognize words in their spoken form (Cross, 2009; van Zeeland, 2018). Additionally, cognitive load theory posits that a high number of unknown elements in a text increases cognitive load, making comprehension more challenging (Paas & Sweller, 2014). This suggests that learners with larger vocabularies are likely to experience less cognitive overload and perform better in listening tasks, as they are better equipped to manage unfamiliar information and concentrate on higher-level meanings.

Threshold effects are evident in the relationship between vocabulary size and listening comprehension. Research indicates that a threshold level of vocabulary knowledge is required for substantial improvements in listening ability. While increases in vocabulary size generally enhance listening comprehension, the impact may plateau once a certain level is achieved (Bonk, 2000; Masrai, 2020). This implies that both the quantity and quality of vocabulary knowledge are crucial, with a sufficient vocabulary base necessary to facilitate effective listening. High levels of vocabulary knowledge become particularly critical for learners with lower overall proficiency, as they depend more heavily on their vocabulary to infer

meanings and understand spoken language (Pan et al., 2018; Cheng & Matthews, 2018).

Further empirical evidence reinforces the link between vocabulary size and listening ability. Fung and Macaro (2019) highlight that insufficient vocabulary can impede comprehension, making strategic behavior less effective in compensating for this limitation. Cheng and Matthews (2018) corroborate this by finding a direct relationship between vocabulary size and listening proficiency. Field (2008) adds that difficulties in recognizing familiar words within rapid speech significantly hinder listening comprehension. Research by Bonk (2000) and Stæhr (2009) supports the notion that larger vocabularies contribute to better listening performance, with vocabulary knowledge explaining a considerable portion of the variance in listening comprehension scores.
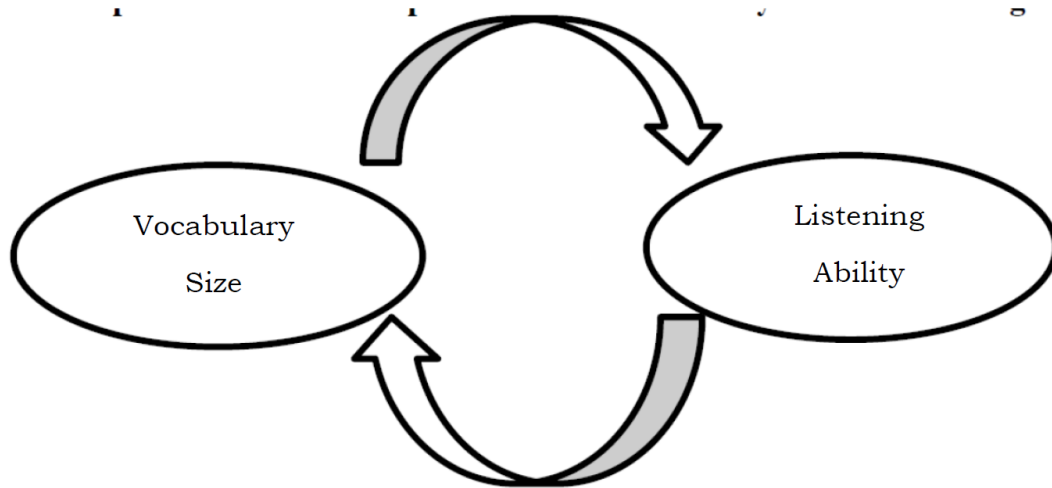

Figure 1. The reciprocal influence of vocabulary size and listening ability

Collectively, these studies illustrate the essential role of a well-developed vocabulary in optimizing listening skills across various contexts. Based on previous research, it is evident that vocabulary size and listening ability have a reciprocal impact on one another. However, to the researcher's knowledge, there is a scarcity of existing studies that have specifically explored the effect of lexical knowledge on listening skills among Moroccan students.

1.11.   *Vocabulary Size and Listening Ability in the Moroccan Context*

Recent studies on vocabulary learning in Morocco have explored its critical role in various aspects of language acquisition, particularly highlighting the interconnectedness between vocabulary knowledge and other language skills. One notable area of research has focused on the relationship between vocabulary and listening comprehension. Studies such as those by Bouziane and Zyani (2018) have demonstrated that vocabulary knowledge is a strong predictor of listening skills among Moroccan EFL learners, suggesting that a robust vocabulary significantly enhances the ability to comprehend spoken English. These findings align with global research but provide a localized perspective, showing that Moroccan

students with a larger vocabulary are better equipped to tackle listening tasks in English (Boudribila, 2019).

Another area of interest is the connection between vocabulary and reading proficiency. Research by Nouri and Zerhouni (2016) examined the relationship between vocabulary knowledge and reading comprehension among Moroccan EFL learners. Their study found that while vocabulary depth strongly correlated with reading comprehension, vocabulary size showed only a low correlation. This suggests that a deeper understanding of word meanings and associations is more critical for reading comprehension than simply knowing a large number of words. This study underscores the need for targeted vocabulary instruction that focuses on both size and depth to improve reading outcomes in Moroccan educational contexts.

In the context of writing skills, research by Ouaouicha (2019) explored the impact of vocabulary knowledge on the quality of written expression among Moroccan high school students. The study concluded that a well-developed vocabulary is essential for producing coherent and sophisticated written texts. Students with limited vocabulary often struggled with expressing complex ideas, resulting in less effective written communication.

Additionally, studies have explored the influence of vocabulary learning on oral proficiency. For instance, El Ouardi (2020) investigated how vocabulary acquisition affects students' speaking abilities. The findings indicated that students who actively engaged in vocabulary-building activities were more confident and fluent in oral communication. Agrram, Mokhtari, and Laaboudi (2024) examined the contribution of both receptive and productive vocabulary breadths to Moroccan EFL learners' speaking ability. Their study revealed positive correlations between vocabulary sizes and speaking proficiency, suggesting that both receptive and productive vocabularies play significant roles in developing speaking skills.

Moreover, research in Morocco has also delved into pedagogical approaches to vocabulary instruction. For example, a study by Laghzaoui (2017) assessed the effectiveness of different vocabulary teaching strategies in Moroccan classrooms. The research found that contextualized vocabulary learning, where words are taught within meaningful contexts, significantly improved students' retention and application of new vocabulary. This approach was particularly effective in helping students transfer vocabulary knowledge to other language skills, such as reading and writing.

Furthermore, Ech-Charfi and Bouaddi (2023) conducted a study on the receptive vocabulary size of Moroccan learners of Modern Standard Arabic (MSA), revealing that students recognized a mean of around 3500 words. This vocabulary size was found to be insufficient for successful engagement with skills such as reading, writing, speaking, and listening, thus pointing to a relatively weak proficiency in these areas in a diglossic context.

Recent Moroccan research on listening abilities in EFL contexts has highlighted the crucial role of vocabulary knowledge in enhancing listening comprehension. Studies such as those by Bouhassane and Alami (2023) found a significant correlation between aural vocabulary knowledge and listening performance among high school students. These findings emphasize that the depth and breadth of vocabulary, particularly aural

vocabulary, are essential for students to effectively understand and process spoken English. As a result, there is a growing consensus that vocabulary instruction should be more integrated into listening activities to improve overall listening proficiency.

In addition to vocabulary knowledge, the instructional approaches employed in Moroccan classrooms have been found to significantly impact listening abilities. El Haddadi (2022) explored the effects of Task-Based Language Teaching (TBLT) on listening skills development in secondary education. The study revealed that TBLT, which emphasizes real-world tasks and active listening practices, leads to notable improvements in students' listening comprehension. This aligns with global research advocating for more interactive and communicative approaches in language teaching.

Furthermore, research has delved into the challenges that Moroccan EFL learners face in developing listening skills. Issues such as the lack of exposure to authentic English listening materials and the dominance of teacher-centered instruction have been identified as significant barriers. Studies by researchers like El Ouardi (2020) highlight that many students struggle with listening tasks due to insufficient practice with diverse English accents and real-life listening situations. These findings underscore the need for a more comprehensive approach to listening instruction—one that not only focuses on vocabulary and comprehension strategies but also provides ample opportunities for students to engage with a variety of spoken English forms in meaningful contexts.

In the Moroccan context, research specifically addressing the relationship between vocabulary size and listening ability is relatively scarce, yet existing studies provide crucial insights. Notable work by Hamdanat (2023) has indicated that a larger vocabulary significantly enhances listening comprehension among Moroccan learners. Hamdanat's research (2023) on Moroccan EFL students demonstrated that those with a broader vocabulary performed better on listening tasks, suggesting a clear link between vocabulary size and listening proficiency. Similarly, El Baghdadi & El Ouidani's study (2022) reinforced this finding by showing that vocabulary size was a significant predictor of listening success among Moroccan public high school students. Despite these contributions, the overall body of research remains limited, highlighting a gap in comprehensive studies focusing exclusively on Moroccan learners.

In their seminal study "Investigating the Correlation between Receptive Vocabulary Knowledge in French and English among Moroccan EFL Learners", Hamdanat, Azzouzi, & El Jemli (2024) delineated the fact that Moroccan students face unique challenges that impact their vocabulary size and listening ability. One major challenge is the limited exposure to authentic English language environments, which hampers effective vocabulary acquisition and listening practice. Traditional teaching methods prevalent in Morocco often emphasize rote learning and do not adequately support the practical application of vocabulary in listening contexts. Additionally, the linguistic landscape in Morocco, where Arabic and French are dominant, complicates English vocabulary acquisition and listening comprehension. The interference from these languages can affect how Moroccan learners process and understand English, underscoring the need

for research that addresses these specific contextual factors (Hamdanat, 2023).

The scarcity of extensive research on vocabulary size and listening ability in Morocco points to significant opportunities for further investigation. Addressing this research gap could lead to more tailored educational strategies that accommodate the unique needs of Moroccan learners. By exploring effective methods for vocabulary development and listening practice within the Moroccan context, educators can better support students in overcoming the challenges they face. This can include adopting more interactive and immersive approaches to language learning that align with the linguistic and cultural realities of Moroccan students. Ultimately, expanding research in this area can provide valuable insights and contribute to improving language education outcomes in Morocco.

2. Methodology
2.1.   *Research design*
The research design of this study employed a correlational approach to investigate the relationship between vocabulary size and listening ability among Moroccan high school students from Almansour Addahbi High School in Sidi Kacem, Morocco. A correlational design was chosen as it is suitable for examining the association between two variables without manipulating them, allowing the researchers to explore the natural relationship between vocabulary knowledge and listening proficiency within the sample (Cresswell, 2014). By using this approach, the study aimed to determine the strength and direction of the correlation between these variables, providing insights into whether an increase in vocabulary size is linked to an enhancement in listening ability among the students. This design was effective in assessing the existing levels of both vocabulary and listening skills in the selected population, contributing valuable data to the understanding of language acquisition in the Moroccan educational context.

2.2.   *Population and sampling*
The target population for this study was Moroccan high school students in their second year of Baccalaureate, specifically those enrolled in the science-math major. A convenience sampling technique was employed to recruit participants from Almansour Addahbi High School in Sidi Kacem, Morocco. A total of 90 second-year Baccalaureate students were included in the study, representing a diverse group in terms of gender and socioeconomic background. Fifty-six percent of the participants were female, while 44% were male. The majority of students belonged to the middle class, reflecting the demographic composition of the local population.

2.3.   *Data collection instruments*
2.3.1. *Vocabulary test*
To assess the participants' vocabulary size, a comprehensive and standardized vocabulary test was administered, consisting of 50 items. The test was designed to measure both the breadth and depth of word knowledge, incorporating a diverse selection of words from various frequency

levels, semantic fields, and word forms (e.g., nouns, verbs, adjectives). The test featured multiple-choice questions, synonym and antonym matching, sentence completion, and contextual usage activities. Participants were required to choose the correct meaning, synonym, or appropriate usage of each word, and identify word forms and definitions, ensuring the test accurately reflected their understanding of vocabulary in different contexts. This approach aimed to quantify the number of words each student could correctly identify and evaluate their ability to recognize and apply these words across a range of language functions. The test was graded out of 20, providing a clear metric for evaluating the students' vocabulary proficiency.

2.3.2. *Listening Ability Test*

The participants' listening ability was evaluated through a standardized listening proficiency test, featuring 50 items. This test was carefully constructed to assess various dimensions of listening comprehension, including understanding main ideas, specific details, making inferences, and grasping speaker intent. The test included a range of audio recordings, such as dialogues, monologues, and short exchanges, representing different registers and levels of complexity. Following each recording, students answered comprehension questions designed to measure their listening skills. These questions included multiple-choice questions, yes/no questions, true/false statements with justification, comprehension questions, sentence ordering, and sentence completion tasks. A listening paper from the Cambridge English: Preliminary test (Cambridge University Press, 2008) was used to assess the listening performance of the study participants. The listening test was graded out of 20, ensuring a balanced and reliable measure of their proficiency in understanding spoken English in diverse thematic contexts.

2.4. *Piloting*

During the piloting stage, the vocabulary and listening tests were administered to a small sample of 15 students who closely mirrored the characteristics of the intended study participants. This preliminary administration aimed to evaluate the tests' reliability and validity. The reliability of the vocabulary test was assessed using Cronbach's alpha, yielding a coefficient of .76, while the listening test achieved a Cronbach's alpha of .82, indicating good internal consistency. Additionally, feedback was solicited from teachers to ensure content appropriateness and accessibility. Based on their recommendations, several items identified as potentially challenging were replaced with easier alternatives to better align the test difficulty with the students' proficiency levels. This iterative process ensured that the final versions of the tests were both reliable and suitably tailored for the target population.

2.5. *Data collection procedures*

The study employed a sequential administration design, with participants completing the vocabulary test followed by the listening test. This order was chosen to establish vocabulary performance as the independent variable and examine its potential impact on listening ability.

Both tests were administered during the students' available time at Almansour Addahbi High School in Sidi Kacem, Morocco.

Given the approximate 90-minute duration of each test, the administration process spanned approximately 15 days. To accommodate participants' schedules and ensure a comfortable testing environment, the researcher conducted individual sessions, allowing students to take the vocabulary test on one day and the listening test on another. To alleviate any anxiety or pressure, the researchers explained that the tests were solely for research purposes and would not be used for official evaluation. Participants were also given the option to use nicknames instead of their real names to further enhance their comfort.

To ensure a well-organized testing environment, the researchers enlisted the help of colleagues to act as invigilators. Clear instructions were provided to participants before each test, and they were encouraged to seek clarification if needed. Initially, there was low participation, prompting the researchers to collaborate with teachers and request that students take the tests immediately after their classes. This strategy proved successful in increasing participation rates, as students were more likely to comply with their teachers' requests.

2.6.   Data analysis procedures

Following data collection, the study focused on analyzing the collected data to address the research question and hypotheses. Both descriptive and inferential statistical methods were employed using SPSS. Descriptive statistics, such as mean values and standard deviations, were used to quantitatively describe the sample and key attributes of the dataset. Inferential statistics, including Pearson correlation and simple linear regression, were utilized to examine the relationship between vocabulary size and listening performance.

The Pearson correlation coefficient (r) was calculated to measure the strength and direction of the linear relationship between these two variables. Regression analysis was conducted to explore how changes in vocabulary size predict changes in listening performance. These statistical techniques provided a rigorous and objective approach to analyzing the data and drawing meaningful conclusions.

3. Findings
3.1.   Descriptive statistics

This sub-section aims to investigate the correlation between students' vocabulary size and their listening performance. It will address the following research question and test the corresponding hypothesis.

RQ: Is there a significant correlation between students' vocabulary size and their listening performance?

H1: There is a positive correlation between students' vocabulary size and their listening performance.

Both variables were measured quantitatively using standardized tests. Vocabulary size is the independent variable, while listening skills are the dependent variable. Pearson product-moment correlation analysis was

conducted to determine the strength and direction of the relationship between these variables. The results, including a scatterplot, will be presented, interpreted, and discussed. Additionally, regression analysis was used to examine the predictive relationship between vocabulary size and listening skills.

The null hypothesis being tested in this analysis is as follows:

NH: There is no significant correlation between students' vocabulary size and their listening performance.

This section investigates the linearity and homoscedasticity of the relationship between vocabulary size and listening abilities. A scatter plot visualizing this relationship is presented below.
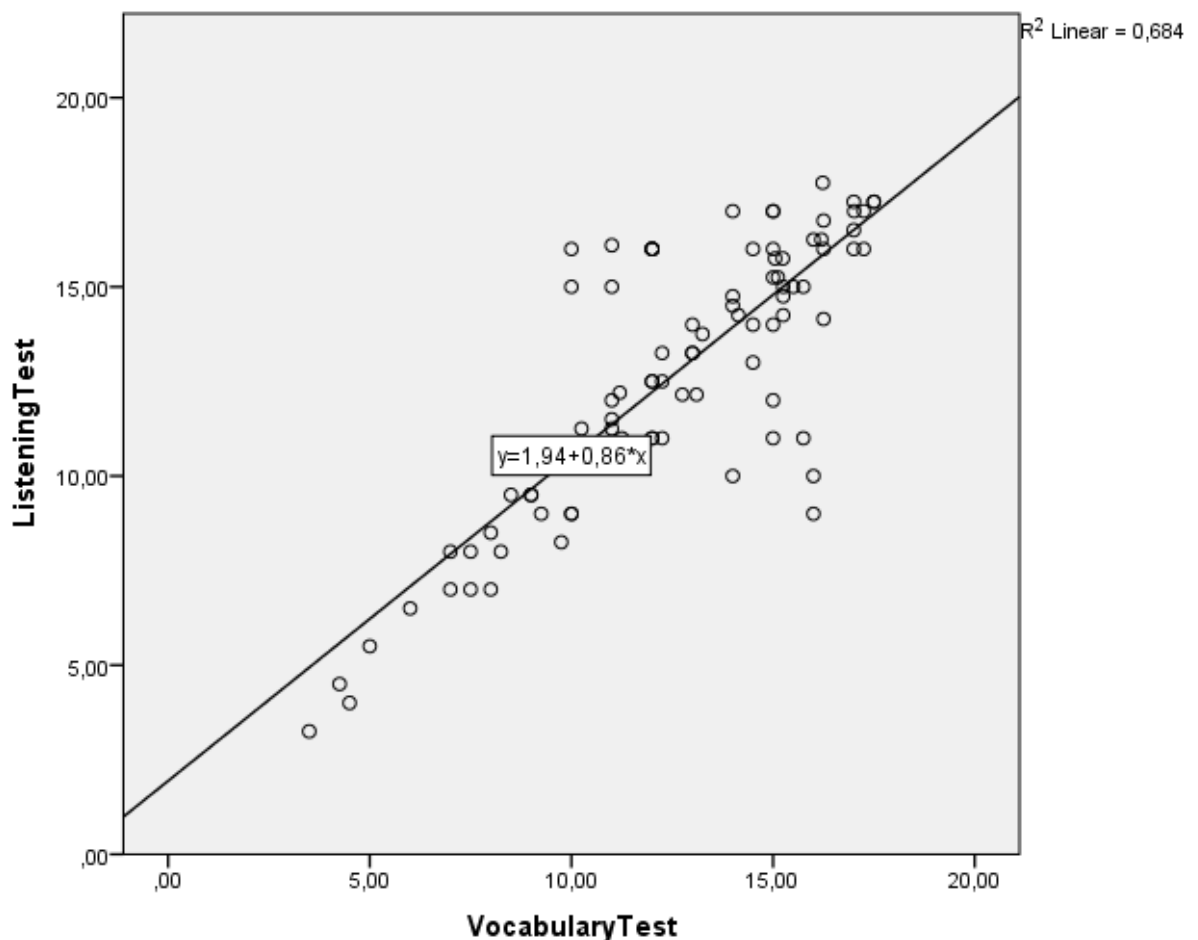

Figure 1. Scatter plot of vocabulary Size and listening skills

The scatterplot reveals a clear positive relationship between vocabulary size and listening abilities among the participants, as indicated by the linear regression line fitted to the data. The equation of the line, y=1.94+0.86*x, suggests that for each unit increase in vocabulary size, listening abilities improve by approximately 0.86 units. The R2 value of 0.684 indicates that 68.4% of the variability in listening abilities can be explained by vocabulary size. This substantial R2 value underscores a strong linear relationship between the two variables, illustrating that vocabulary size is a significant predictor of listening performance. The positive slope of the regression line

further confirms that as students' vocabulary size increases, their listening comprehension tends to improve, supporting the findings of a robust correlation and emphasizing the importance of vocabulary knowledge in enhancing listening skills.

Table 1
Correlation between Vocabulary and listening tests

Correlations		Vocabulary Test	Listening Test
VocabularyTest	Pearson Correlation	1	,827**
	Sig. (2-tailed)		,000
	N	90	90
ListeningTest	Pearson Correlation	,827**	1
	Sig. (2-tailed)	,000	
	N	90	90
**. Correlation is significant at the 0.01 level (2-tailed).			

The correlation table presents a strong positive correlation between vocabulary test scores and listening test scores. The Pearson correlation coefficient of 0.827 indicates a substantial relationship between the two variables, with a significance level of 0.000. This suggests that students with higher vocabulary test scores tend to also have higher listening test scores, and vice versa. The strong correlation coefficient suggests that vocabulary size is a significant predictor of listening ability in this sample of Moroccan high school students.

Table 2
Model Summary for vocabulary and Listening scores

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,827a	,684	,681	1,99704
a. Predictors: (Constant), VocabularyTest				

The model summary provides valuable insights into the relationship between vocabulary test scores and listening test scores. The R-squared value of 0.684 indicates that approximately 68.4% of the variance in listening test scores can be explained by vocabulary test scores. This suggests a strong relationship between the two variables. The adjusted R-squared value of 0.681 is only slightly lower, indicating that the model's explanatory power is robust even when accounting for the number of predictors. The standard error of the estimate of 1.99704 measures the average distance between the predicted listening scores and the actual listening scores, providing an indication of the model's accuracy in predicting listening performance based on vocabulary test scores. Overall, the model summary suggests a significant and substantial relationship between vocabulary size and listening ability.

Table 3
ANOVA for Vocabulary scores and Listening scores

ANOVAª		Sum of Squares	df	Mean Square	F	Sig.
Model						
1	Regression	760,626	1	760,626	190,720	,000ᵇ
	Residual	350,960	88	3,988		
	Total	1111,586	89			
a. Dependent Variable: ListeningTest						
b. Predictors: (Constant), VocabularyTest						

The ANOVA table provides a statistical analysis of the relationship between vocabulary test scores and listening test scores. The F-statistic of 190,720 and the associated p-value of 0.000 indicate that the model is statistically significant, meaning that vocabulary test scores are a significant predictor of listening test scores. The R-squared value of 0.684, as previously discussed, suggests that vocabulary test scores explain a substantial portion of the variance in listening test scores. The ANOVA table further demonstrates that the regression model is a significant fit for the data, as evidenced by the significant F-statistic. This suggests that the relationship between vocabulary test scores and listening test scores is not due to chance and is a meaningful association.

Table 4
Coefficients of Vocabulary and Listening Tests Scores

Coefficientsª	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
Model					
	B	Std. Error	Beta		
1 (Constant)	1,942	,803		2,418	,018
VocabularyTest	,857	,062	,827	13,810	,000
a. Dependent Variable: ListeningTest					

The coefficients table provides valuable insights into the relationship between vocabulary test scores and listening test scores. The standardized coefficient (beta) of 0.827 indicates a strong positive relationship between the two variables, suggesting that vocabulary test scores are a significant predictor of listening test scores. The unstandardized coefficient of 0.857 indicates that for every one-unit increase in vocabulary test score, listening test scores increase by 0.857 units, holding other variables constant. The t-statistic of 13.810 and the associated p-value of 0.000 confirm the statistical significance of this relationship, suggesting that the observed relationship is unlikely to be due to chance. Overall, the coefficients table provides compelling evidence for a strong positive association between vocabulary test scores and listening test scores.

4. Discussion

The current study investigated the relationship between vocabulary size and listening abilities among 90 second-year baccalaureate students in

Morocco, revealing a robust positive correlation (r = 0.680, p < 0.01) between these variables. This significant finding highlights that students with larger vocabularies tend to excel in listening tasks, aligning with an extensive body of research emphasizing the interplay between vocabulary knowledge and listening comprehension.

Bonk (2000) established a critical connection between second language lexical knowledge and listening comprehension, demonstrating that a well-developed vocabulary enhances the processing and understanding of spoken language. This relationship is paramount, as effective listening necessitates not only the ability to hear words but also the aptitude to decode their meanings in real-time. Further research by Van Zeeland (2013, 2014) underscored the significance of lexical inferencing—where students utilize their vocabulary knowledge to make educated guesses about unfamiliar words—in achieving effective listening across both first and second languages. Such inferencing is pivotal for comprehending fast-paced spoken discourse, wherein context is essential for understanding.

Supporting this perspective, Cheng and Matthews (2018) reaffirmed a strong correlation between L2 vocabulary knowledge and listening comprehension, thereby reinforcing the necessity of prioritizing vocabulary instruction within educational contexts. Similarly, Schmitt (2010) articulated that vocabulary knowledge is integral to attaining overall language proficiency, positing that enhanced vocabulary not only bolsters listening and reading skills but is also linked to improvements in speaking and writing abilities. This interconnectedness among language skills underscores the holistic nature of language acquisition.

Moreover, integrating targeted vocabulary learning strategies into the curriculum has the potential to significantly enhance students' listening capabilities, which are essential for effective communication and academic success. For instance, explicit instruction on high-frequency words, idiomatic expressions, and context-specific vocabulary can equip students with the necessary tools to decode spoken language more effectively and confidently (En-nda & Koumachı, 2021).

Stæhr (2009) emphasized that vocabulary knowledge is a key determinant of advanced listening comprehension, suggesting that more extensive lexical knowledge facilitates better understanding of complex spoken texts. Similarly, Pan et al. (2018) found that an expanded vocabulary positively impacts L2 listening comprehension, reinforcing the notion that both vocabulary breadth and depth are crucial components of listening success. These findings align with the Lexical Quality Hypothesis proposed by Perfetti (2007), which posits that robust vocabulary knowledge supports various language skills, including listening. This hypothesis provides a theoretical framework for understanding why vocabulary knowledge correlates significantly with listening proficiency.

Additional studies further corroborate this relationship. For example, Rurangirwa (2021) identified vocabulary size as a strong predictor of listening comprehension among Rwandan secondary school students, highlighting that the ability to comprehend lectures and spoken discourse is directly linked to their lexical knowledge. Kormos and Sáfár (2008) also

demonstrated that vocabulary richness directly influences listening comprehension among English language learners, suggesting that limited vocabulary hampers effective understanding of auditory materials.

Further research by Zhang et al. (2019) explored the relationship between vocabulary knowledge and listening comprehension across various contexts, confirming that both receptive and productive vocabulary are critical for understanding spoken language. Their findings suggest that students possessing a well-rounded vocabulary—characterized by both breadth and depth—tend to perform better in listening tasks, further linking various dimensions of vocabulary to listening proficiency.

Van Zeeland and Schmitt (2013) investigated lexical coverage in both L1 and L2 listening contexts, confirming that vocabulary knowledge exerts a similar influence in both scenarios. Their research illustrates that the extent of known vocabulary directly impacts comprehension levels in both the native language and the target language. Complementarily, Zhang and Zhao (2021) examined the relationship between vocabulary breadth and depth in relation to listening comprehension, finding that both dimensions substantially contribute to listening proficiency.

In summary, the results of this study, bolstered by a comprehensive array of previous research, underscore the pivotal role of vocabulary in listening comprehension. They illuminate the critical need for integrating effective vocabulary instruction into language teaching practices. By leveraging these insights, educators can enhance students' language development and improve listening proficiency, thereby contributing to their overall academic success.

Given the fundamental nature of listening skills in both academic contexts and everyday communication, a curriculum that emphasizes vocabulary development can provide a sturdy foundation for students to bolster their comprehensive language skills, fostering the development of more competent and confident language users. In light of the findings of this study and the supportive literature, future research could delve deeper into specific vocabulary teaching methodologies that directly influence listening comprehension, offering educators actionable strategies for implementation in diverse classroom settings.

5. Conclusions

In this study, we aimed to investigate the relationship between vocabulary size and listening abilities among Moroccan high school students, focusing on 90 second year baccalaureate students from Almansour Addahbi High School in Sidi Kacem. The primary objective was to understand how vocabulary knowledge influences listening comprehension and explore the interplay between these language skills.

The key findings of the study revealed a significant positive correlation between vocabulary and listening abilities (r = 0.827, p < 0.01)among the participants. This suggests that students with larger vocabulary sizes tend to have higher listening scores, while those with smaller vocabularies scored lower in listening comprehension. The regression analysis further supported these results, indicating that vocabulary significantly predicted listening abilities (Beta = 0,827, p < 0.01). These findings emphasize the crucial role of

vocabulary knowledge in facilitating effective listening skills among baccalaureate students.

The study's contributions to the field of language learning lie in providing empirical evidence of the strong association between vocabulary and listening abilities. The research sheds light on the interdependence of these language skills, underscoring the importance of vocabulary proficiency in comprehending spoken language. These contributions underscore the significance of integrated language instruction and call for further research to deepen our understanding of the dynamics between vocabulary and listening in language learning contexts.

Based on the study's findings, educators are encouraged to prioritize vocabulary instruction and integrate vocabulary-focused activities into their language teaching approaches. Incorporating vocabulary learning strategies within listening tasks can enhance students' language comprehension and overall language development (Agrram, 2020). Additionally, researchers are advised to explore this relationship across diverse language learning populations and investigate the impact of various vocabulary instruction interventions on listening abilities.

Future research in this area could expand its scope to include different age groups, linguistic backgrounds, and educational settings. Comparative studies could examine the relationship between vocabulary and listening across various languages and language learning contexts. Moreover, investigating the long-term effects of vocabulary instruction on listening skills could offer valuable implications for language educators and curriculum designers. Additionally, exploring potential moderating variables, such as language proficiency level or motivation, might further enhance our understanding of the vocabulary-listening relationship.

To sum up, this study underscores the significant role of vocabulary knowledge in enhancing listening abilities among Moroccan high school students. The positive correlation between vocabulary and listening highlights their interconnectedness in language learning. These findings contribute to the field of language education by emphasizing the importance of vocabulary instruction and integrated language teaching strategies to foster comprehensive language development. As researchers and educators build upon this research, there is potential to enhance language learning outcomes and promote effective language comprehension among learners.

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