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Examining the Concurrent Contribution of Receptive and Productive Vocabulary Breadth Aspects to Moroccan EFL Students' Speaking Ability

Abdelaziz Agrram
Corresponding author: agrram.a@ucd.ac.ma
Department of English, Faculty of Letters and Humanities
Chouaib Doukkali University, El Jadida, Morocco

Najat Mokhtari
Department of English, Faculty of Letters and Humanities
Chouaib Doukkali University, El Jadida, Morocco

Daouia Laaboudi
Department of English, Faculty of Letters and Humanities
Chouaib Doukkali University, El Jadida, Morocco

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Abstract

The present paper investigates the contribution of productive as well as receptive vocabulary breadths to Moroccan learners' EFL speaking ability. The study's significance lies in its exploration of the under-researched area of speaking proficiency, furthering our understanding of the link between vocabulary knowledge and language skills. To further probe this connection, particularly in the high school context, this study investigated the relationship between vocabulary size and speaking ability using valid and reliable vocabulary research instruments. This study addressed two research questions: a) to what extent do receptive and productive vocabulary size scores correlate with speaking ability? b) to what extent do receptive and productive vocabulary size scores explain the variance in learners' speaking ability? To answer these questions, the researchers administered the Updated Vocabulary Levels Test, the Productive Vocabulary Levels Test, and a speaking task to 40 tenth-grade EFL participants. Spoken data were graded by reference to IELTS' speaking band descriptors. Results of Pearson Correlation disclosed positive correlations between receptive and productive lexical breadths and speaking proficiency. Moreover, findings of multiple linear regression revealed that receptive and productive vocabulary sizes could explain performance in speaking ability. Implications for EFL vocabulary instruction and speaking proficiency development are discussed.

Keywords: EFL speaking ability, productive vocabulary size, receptive vocabulary size, speaking proficiency, vocabulary and speaking

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Introduction

Vocabulary size has been regarded as an indicator of proficiency in the four skills (Miralpeix & Muñoz, 2018; Nation, 2016; Uchihara et al., 2020). In fact, vocabulary breadth instruments, such as the Vocabulary Size Test (VST), the checklist test, and the Vocabulary Levels Test (VLT), have been utilized as diagnostic and placement tests. This suggests that lexical breadth reflects overall language proficiency (Meara, 1990; Nation, 2013; Uchihara & Clenton, 2018). To take an example, vocabulary size has been examined with respect to international and local standard proficiency tests such as IELTS (Milton et al., 2010), Test of English as a Foreign Language (TOEFL) (Qian, 2002), and Moroccan high-stakes baccalaureate examinations of reading (Agrram et al., 2023), to name a few. This entails that mastery of lexis is crucial in language development and proficiency. While the literature is replete with studies on the association between receptive lexical breadth and reading (Nation, 2006; Pathan et al., 2019; Webb & Paribakht, 2015), writing (Staehr, 2008), listening (Bonk, 2000), and speaking (Uchihara & Clenton, 2018), the number of studies on the contribution of both receptive and productive vocabulary breadth aspects to speaking is still inadequate (Janebi Enayat & Derakhshan, 2021). It is worth noting that Uchihara et al. (2020) argued that "…yet surprisingly little is known about the role of vocabulary in speaking" (p.146).

Accordingly, different researchers have called for investigating receptive and productive vocabulary size aspects with speaking ability (Clenton, 2020; Derakhshan & Janebi Enayat, 2020; Schmitt, 2014; Uchihara & Clenton, 2018) because the lion's share of literature has been concerned with receptive skills, namely reading. Further, the extant scholarship that aimed at exploring the link between lexical knowledge and speaking has focused either exclusively on receptive knowledge or productive knowledge of EFL university students. In an attempt to occupy these lacunas, the present study aims to address the limited research on the impact of lexical breadth, in both receptive and productive modes, on the speaking ability of secondary education students. This research has two main objectives: (a) to contribute to the existing body of knowledge on the relationship between lexis and speaking, and (b) to strengthen the theoretical foundation and provide further empirical evidence on vocabulary acquisition in high school students, building upon the findings of international experts in the field.

This study seeks to answer the following research questions:

1. To what extent do receptive and productive vocabulary size scores correlate with speaking ability?
2. To what extent do receptive and productive vocabulary size scores explain the variance in learners' speaking ability?
3.

Literature Review

The Vocabulary Knowledge Construct

Knowing what a word means has long perplexed theoretical vocabulary acquisition researchers because of the number of components that comprise word knowledge. In a highly cited model of lexical competence, Nation (2001) listed 18 components that constitute what knowing a word means. This list comprises elements that pertain to receptive and productive modes of form, meaning, and use. In effect, to assert knowledge of a word, one should be able to pronounce and spell the word, know about its associations, collocations, constraints on use and so forth. This model delineates the specific components of word knowledge but is impracticable to adopt in practice, as it would require a test battery of 18 questions for every lexical item to be measured

(Meara, 1996a). As a solution to this impasse, Daller et al. (2007) proposed a lexicon-centered model that limits the number of components to easily measurable dimensions. They introduced three levels of vocabulary knowledge: (a) breadth, (b) depth, and (c) fluency. To expound, whereas the lexical size is associated with the quantity of words a person knows, the depth of lexis concerns how much one knows about those words (Daller et al., 2007). The last dimension is fluency, which is defined as the automaticity and ease with which words are used and retrieved from memory. Proponents of lexicon-centered models endorse it because it makes vocabulary knowledge concrete and easily measurable.

Another crucial distinction in vocabulary acquisition is receptive and productive knowledge. These two modes of knowledge are related to vocabulary breadth and depth (Derakhshan & Janebi Enayat, 2020; Tong et al., 2022). Schmitt (2010) contended that receptive features of knowledge pertain to language skills such as listening and reading, while productive aspects relate to the type of knowledge necessary for writing and speaking. By extension, the same subdivision holds for vocabulary tests. There are many receptive vocabulary breadth and depth instruments like the VST (Nation & Beglar, 2007) for vocabulary size and the Word Associates Test (Read, 1993) for receptive vocabulary depth. With respect to productive tests, the Productive Vocabulary Levels Test (PVLT) (Laufer & Nation, 1999) is an instance of a test of productive lexical size. Besides, the Vocabulary Knowledge Scale (VKS) (Paribakht & Wesche, 1997) is an example of a test of productive vocabulary depth. The receptive mode of vocabulary size has garnered considerable attention in relation to the four skills, compared to the productive mode (Derakhshan & Janebi Enayat, 2020; De Jong & Mora, 2017; Miralpeix & Muñoz, 2018). This, perhaps, stems from the intricacy of defining and measuring productive vocabulary knowledge aspects in comparison to receptive knowledge features (David, 2008; Fitzpatrick & Clenton, 2017). The same trend could be observed in Arabic vocabulary studies. That is, there are only receptive vocabulary breadth and depth tests, while there have not been any attempts to develop productive vocabulary tests of Arabic. For example, with respect to receptive size, Ech-Charfi (2024) developed the Arabic Receptive Vocabulary Size Test, which is based on Nation and Beglar's (2007) VST. Concerning lexical depth, Agrram and Ech-Charfi (2024) measured the receptive collocational knowledge of Moroccan learners and used the Rasch 1PL model to validate a Receptive Collocational Test of Arabic.

In this paper, vocabulary knowledge is defined with reference to Daller et al.'s (2007) lexicon-centered model of vocabulary competence, which is divided into three components. Of special interest to us, however, is vocabulary breadth in its receptive and productive modes in relation to the under-researched skill of speaking. This study fills an important niche in the literature related to the contribution of modes of vocabulary size to speaking proficiency.

Speaking ability

Several researchers have argued that speaking ability is contingent upon good mastery of lexis, although the association between lexis and speaking proficiency has received minimal scholarly attention in the literature (De Jong et al., 2012; Koizumi & In'nami, 2013; Uchihara & Clenton, 2018, 2023). Despite the dearth of research regarding vocabulary and speaking, an emerging number of studies have confirmed the fundamental importance of vocabulary in speaking proficiency (Janebi Enayat & Derakhshan, 2021; Miralpeix & Muñoz, 2018; Tong et al., 2022). The findings of these studies support the theoretical relevance of the centrality of vocabulary in speaking ability.

Concerning the theoretical role of vocabulary in speaking ability, Levelt's (1989, 1999a) L1 and Kormos' (2006) L2 modular models of speech production underscore the thesis that speech production is lexically guided. However, they reckon that vocabulary is not the only critical component in their models. They hold that utterance production undergoes three mechanisms, which are relatively autonomous and carried out by specialist modules (Kormos, 2006). The first mechanism is conceptualization; it is the process of conceptualizing a preverbal message, which activates concepts to be encoded. This activation spreads to semantically related concepts as well. The second mechanism is formulation. It is the process of encoding preverbal lexical concepts with the speaker's language. The last mechanism is articulation; it is the actual conversion of the previous mechanisms into an utterance.

These speaking ability models advocate the critical role of lexis in the process of speech production. While it is true that syntactic, morphological, phonological and encyclopedic knowledge are essential for speaking, vocabulary remains a key component in speech production (Nation, 2013). Accordingly, these models support the centrality of vocabulary breadth, depth, and fluency in speaking ability (Koizum & In'nami, 2013; Nation, 2001).

Ultimately, the present study adopts the theoretical standpoint of speech production devised by Levelt's (1989; 1999a) and Kormos (2006) models. According to these theoretical frameworks, vocabulary is an indispensable component in spoken proficiency since without lexis meaning can never be conveyed (Wilkins, 1972). It is worth pointing out that the decision to contextualize the present paper in Levelt's and Kormos' frames is informed by their adoption in a substantial number of studies on lexical breadth and speaking ability (De Jong et al., 2012; De Jong & Mora, 2017; Hilton, 2008; Koizumi & In'nami, 2013).

International Scholarship on Vocabulary and Speaking

On the international landscape, a few attempts have been made to explore the link between lexical breadth and speaking ability. De Jong et al. (2012) purported to explore what best predicts speaking proficiency in L2 learners, recruiting 54 native speakers of Dutch. Their study comprised several variables, including but not limited to grammatical knowledge, vocabulary knowledge, and pronunciation skills. For this purpose, they employed a sentence completion test to gauge productive lexical knowledge. They found that pronunciation and productive knowledge of vocabulary were the most important indices of speaking proficiency. While these findings accentuate the centrality of lexical knowledge in speaking ability, their operationalisation of vocabulary size was indefinable. That is, De Jong and colleagues focused on productive vocabulary size, measured by word-frequency as a proxy, at the expense of the receptive mode. In a different attempt, Koizumi and In'nami (2013) conducted a study examining the predictive role of productive lexical breadth, lexical depth, and speed of processing in the speaking ability of novice and intermediate EFL Japanese learners, using L1-L2 translation tasks. Their results showed that lexical breadth and depth strongly predicted speaking proficiency, but speed was not a determinant predictor of speaking ability. This study incorporated three dimensions of lexical competence but discarded the role of receptive vocabulary size. Overall, the overarching limitation of these studies was the research instruments employed in their investigations (Derakhshan & Janebi Enayat, 2020; Janebi Enayat & Derakhshan, 2021). In other words, they employed sentence completion and L1-L2 translation tasks to measure vocabulary knowledge, although there are other reliable research instruments such as the WAT, the PVLT, and the VST, to name but a few.

Alternatively, other researchers opted for using valid and standardized tests of vocabulary size to probe the association between speaking ability and vocabulary breadth. Nevertheless, they focused just on one mode of vocabulary size, which is receptive knowledge. For instance, De Jong and Mora (2017) assessed the receptive lexical breadth of 51 upper-intermediate EFL students, employing Meara and Miralpeix's (2016) X/Y Lex receptive vocabulary size test. Their findings disclosed that receptive vocabulary breadth positively correlated with oral fluency. This study recruited EFL university students and discarded the significance of productive lexical breadth in speaking. Similarly, Uchihara and Clenton (2018) investigated the association between receptive lexical breadth and speaking ability of university learners of English as a second language, using a picture narrative task and Meara and Jones' (1988) EVST. Using IELTS speaking scales, their findings indicated that the subjects' receptive vocabulary size correlated with speaking proficiency (r=.552). Likewise, productive vocabulary size of the university subjects was neglected in their study. Employing a valid and reliable receptive vocabulary breadth test and a semi-guided interview, Miralpeix and Muñoz (2018) explored the correlation between receptive lexical breadth and the four skills, including speaking ability, of 42 EFL university learners. They reported that receptive vocabulary breadth moderately correlated with speaking ability (r=. 489). Along the same line of reasoning, the productive vocabulary size mode was disregarded. To conclude, despite the significant findings of these studies, they all focused solely on university-level participants and the receptive aspect of vocabulary breadth.

Nonetheless, it is worth mentioning other studies that only targeted the relationship between productive vocabulary breadth and proficiency in speaking. To illustrate, Alharthi (2019) used the PVLT and a speaking task to investigate the correlation between breadth and speaking proficiency of 18 EFL university students. The results indicated that productive vocabulary strongly correlated with speaking ability (r=.698, p< .001). This suggests that the stronger a learner's mastery of productive vocabulary is, the more proficient they are in speaking. However, Alharthi solely focused on productive lexical breadth with a limited number of participants, discarding the role of receptive vocabulary breadth. Another study by Uchihara and Saito (2019) purported to examine the link between productive lexical size and L2 speech production, using Lex 30 to gauge productive knowledge and a picture description task for speaking. The findings revealed that productive size was weakly correlated with speaking performance (r= .34). In a more recent attempt, Uchihara and Clenton (2023) examined the correlation between university students' spoken and written productive vocabulary breadth and their speaking ability. They reported that written productive vocabulary size did not correlate with speaking scores. In contrast, spoken productive vocabulary size significantly correlated with speech rating. Although these studies confirmed the significance of lexical breadth in speaking, they exclusively examined productive vocabulary size. However, it is worth adding that Uchihara and Clenton's (2023) study opened a new research venue, which encourages employing different vocabulary breadth aspects and modalities (spoken and written) in future studies.

Thus far, the above-reviewed studies exclusively focused on one aspect of vocabulary breadth (i.e., receptive or productive) in relation to speaking. Clenton (2020) claimed that "We therefore propose that future studies in which comparisons are made between speaking and vocabulary knowledge should include multiple aspects of both" (p.166). In this statement, Clenton urged researchers to use multiple aspects of both lexical breadth and speaking ability to explore the association between them. Along the same chain of thought, Uchihara and Clenton (2018) recommended that future academic endeavors should aim at including receptive and productive

modes of lexical breadth and depth. Thus, it is opportune to note that a few recent studies responded to these calls and endeavoured to attain nuanced understandings of the link among receptive and productive lexical breadths, lexical depth, and speaking ability.

Kiliç (2019) aimed to probe the association among receptive and productive lexical breadths, depth, and speaking proficiency of 54 EFL university students using the VLT, the PVLT, and a speaking placement test. Of interest to us, however, are the receptive and productive modes of lexical breadth. Kiliç's results revealed that both the VLT (r=.40, p<.01) and the PVLT (r=.30, p<.01) correlated with speaking proficiency. Besides, the findings of multiple regression disclosed that depth of lexis explained the highest percentage of variance in speaking scores (11.3 percent). In contrast, productive vocabulary size and receptive vocabulary size only accounted for 5 percent of the variance. This paper showed that receptive vocabulary size had the most minor contribution to speaking ability. In a more recent attempt, Janebi Enayat and Derakhshan (2021) probed the association between receptive and productive lexical breadths with speaking ability. For this purpose, they administered the VLT for receptive breadth, the Lex30 for productive size, and IELTS tasks for speaking proficiency of 46 EFL university students. Their study evidenced that both receptive and productive sizes strongly correlated with speaking ability (Receptive: r= .832; Productive: r=.790). To further explore the link between vocabulary size and speaking, the researchers employed regression analysis and found that receptive vocabulary size uniquely explained 48 percent of the variance in speaking ability (ß=0.485, p<.05), while productive size only accounted for 29 percent of the variance (ß=0.29, p<.05). These findings suggest that receptive vocabulary size plays a critical role in speaking ability and can explain variance in EFL learners' speaking scores along with productive vocabulary size. In much the same way, Tong et al. (2022) used the VLT, PVLT, and IELTS tasks to examine the link between vocabulary size and speaking ability of 312 EFL university students. Contrary to the findings of the previous study, the regression results of Tong et al.'s endeavour disclosed that productive vocabulary size (ß=.32) had the most substantial effect on speaking performance, while receptive vocabulary size (ß = .15) had a weak impact. Similarly, the correlation findings of Tong and colleagues run counter prior findings; that is, whereas receptive vocabulary size weakly correlated with speaking ability (r=.315, p<001), productive vocabulary size moderately correlated with speaking ability (r=.472, p<.001).

As can be observed from the above-studies, the findings of vocabulary size are to some extent conflicting. Even though these studies employed valid and standardized instruments to probe the association between vocabulary size in its two modes with respect to speaking ability, they produced inconsistent results. This entails that this topic merits more attention, recruiting different populations from different contexts to obtain conclusive evidence. To name a common tendency in the reviewed studies, they generally recruited tertiary-level participants. Hence, exploring secondary EFL students' vocabulary breadth and speaking proficiency remains direly warranted.

Based on the above pertinent review, several literature lacunas and methodological research gaps were identified. First, a sizeable amount of studies exclusively examined either receptive vocabulary breadth or productive vocabulary breadth to probe their associations with speaking ability. Second, a number of researchers utilized controversial vocabulary knowledge instruments such as sentence completion tasks and L1-L2 translation tests. Third, most studies on the association and contribution of lexical breadth to speaking proficiency recruited EFL university participants. Therefore, several academic calls have been made to investigate the concurrent

contribution of different lexical dimensions to speaking and employ valid and reliable vocabulary knowledge tests (Clenton, 2020; Janebi Enayat & Derakhshan, 2021; Uchihara & Clenton, 2018, 2023). With respect to the informants' niche, it is worthwhile to explore overlooked populations like primary education pupils and high schoolers. By way of conclusion, this paper aligns with the previously reviewed studies, which targeted different vocabulary modes in relation to speaking. However, it differs in the sense that it seeks to address their limitations.

Method

Since the present study aimed to explore the association between receptive vocabulary size, productive vocabulary size, and EFL speaking ability, the researchers adopted a correlational regression research design. This design is non-experimental and only deals with relationships among variables.

Participants

To answer the research questions posed in this paper, the authors used convenience sampling to recruit 40 tenth-grade international stream high school students (12 males and 28 females, aged between 14 and 18 years; M= 15.9; SD= 2.4) from a public high school in Morocco. The subjects' L1 was Moroccan Arabic, and they studied English for around 2-4 years. Their English proficiency level is indicated by their receptive vocabulary size score, in which they showed reasonable mastery of the 1st and 2nd frequency bands (Table Two). The participants received 3 hours of English every week in the first semester of the school year (2022-2023).

Concerning the speaking test, two external doctoral candidates in Applied Linguistics were recruited to assess the participants' speaking performances, following IELTS public band descriptors. These blind raters are also EFL high school teachers who have extensive experience as IELTS tutors. Thus, they have some experience dealing with IELTS scales.

Research Instruments

The Receptive Vocabulary Breadth Instrument (UVLT)

Webb et al. (2017) designed this test to measure receptive knowledge of the most frequent words in English. They contend that the test items, which are extracted from Nation's (2012) British National Corpus (BNC) and the Corpus of Contemporary American English (COCA) frequency wordlists, are useful and probably affect EFL learners' communicative abilities. The authors employed this particular test for several reasons. First, vocabulary level tests have been considered as diagnostic measures of word knowledge at different frequency bands (Schmitt, 2010). Unlike the VST, the UVLT is more comprehensive and provides a good account of the most frequent words in English corpora. To clarify, while the VST uses only ten items for each frequency band, the UVLT assesses knowledge of 30 items. Hence, it serves as a good and reliable diagnostic test of the vocabulary profile of learners. Second, the source of lexical items is Nation's (2012) latest account of British and American English frequency wordlists. Third, the UVLT has an excellent reliability estimate (.96). This entails that its findings will be reproducible irrespective of the number of times the test is retaken. Finally, the UVLT employs a grid format of 10 clusters with three items per frequency band. This format is straightforward and understandable for learners because they only have to check the correct box for each definition. Figure One shows a sample of a cluster extracted from the UVLT. To prevent guessing effects, Webb and colleagues used

distractors from higher frequency bands. For example, if the target words belong to the first 2K level, the distractors are from the adjacent frequency levels (3K or 4K levels).

	choice	computer	garden	photograph	price	week
cost					1	
picture				1		
place where things grow outside			1			

Figure 1. UVLT sample cluster 1

The Productive Vocabulary breadth instrument (PVLT)

Developed by Laufer and Nation in 1999, the PVLT seeks to assess form-recall knowledge of vocabulary items. It uses a sentence-defining format in context with a blank space for the target word. This format may be confusing for learners at first as it leaves many options to choose from (e.g., synonyms of the target word). However, Laufer and Nation supplied the first letters of the target words to limit the possible answers. The PVLT is different from the UVLT because it measures knowledge of 18 words at different frequency bands starting from the 2000 word level. This test was utilized in this study because it demonstrated a high reliability estimate (.91) and has been used extensively in a large number of studies (Alharthi, 2019). Figure Two depicts a sample of the PVLT. As can be observed, the test is very easy to use and offers initial letters to aid students in supplying the correct answer.

The 2000-word level
1. I'm glad we had this opp_____ to talk.
2. There are a doz_____ eggs in the basket.

Figure 2. PVLT Version C sample 1

Speaking Test

To gauge the subjects' speaking ability, the authors employed an IELTS' speaking cue card. The choice of this particular oral elicitation technique is informed by different reasons. Unlike traditional methods of oral elicitation, namely paragraph and sentence reading (Saito et al., 2016), the current task is spontaneous and allows the candidates to produce lexically rich spoken data. Besides, the speaking card is taken from previous IELTS proficiency speaking tests (Appendix A) and has been used by several researchers with IELTS' official band scales of speaking (Janebi Enayat & Derakhshan, 2021; Derakhshan & Janebi Enayat, 2020).

Research Procedures

Test Administration

Since the authors employed different research instruments, they collected data on various occasions. To start with, the authors administered the first three levels of the UVLT (1000, 2000, and 3000-word levels) in the first week of March 2023. The decision not to administer the full UVLT to the subjects is based on previous academic endeavours. Agrram (2020) and Agrram et al. (2023) showed that the vocabulary size of Moroccan EFL Master students' and twelfth-grade students is less than 3000 word families. Thus, words beyond the 3000 word level would be challenging for Moroccan EFL tenth-grade learners. With respect to the duration, the authors allocated 30 minutes for the UVLT test. After one week from the first data collection session, the

participants took two levels of the PVLT in 30 minutes as well. The levels were the 2000 and 3000 word bands. Administering the two vocabulary size instruments on different occasions was done to avoid exhaustion, which might affect the participants' performance. Moreover, because the UVLT and PVLT are based on word frequency, the authors considered a one-week interval sufficient to avoid testing method effects (Bachman, 1990; Janebi Enayat & Derakhshan, 2021). The testing method effect might interfere with the findings of the study since the two vocabulary tests are predicated on word frequency. As a result, the participants might remember some items from the previous test, which might in turn negatively affect our findings.

As for the speaking test, one week after the PVLT data collection session, the informants were individually interviewed in different empty classrooms to ensure they were comfortable and avoid any student-reliability effects (Brown, 2004). It took around 5-6 minutes to explain and interview each student. Thus, the oral test took place in three different classrooms with the researcher and other colleagues. The interviewers greeted the participants, asked them general questions to break the ice, and explained the task. Afterward, the participants were shown a speaking cue card with interview-like questions about leisure activities. With respect to research ethics, the participants' parents and legal guardians signed a written consent form of participation in all school activities, contests, and other extracurricular activities, including action research and research projects. Their guardians were informed that the recordings are anonymous and students have the right to refuse or drop out of the research study at their convenience. In accord with this, all participants had one minute to prepare for the task and their responses were recorded. The duration of the recordings varied; some participants took 3 minutes while other needed only 90 seconds.

Scoring the Tests

To score the two vocabulary size tests, exact scoring methods were used. For the UVLT, the scoring was straightforward; the participants earned one point for every correct answer that they checked. Concerning the PVLT, the scoring method was also exact but extra attention was deemed to check for the spelling of the target words. Differently put, the subjects earned one point only if they correctly spelled the word.

Given the large number of approaches to gauge speaking proficiency, the present paper employed human rating scoring. This method of assessment requires the assessor to rate the testees' performance against a given scale (Uchihara, 2021). Human rating is very popular in vocabulary and speaking studies and has been profusely used in the literature (Uchihara & Clenton, 2022; Uchihara & Saito, 2019). As regards the chosen scale, this study employed the IELTS public speaking band descriptors to gauge speaking proficiency. This scale comprises four components: fluency, lexis, accuracy, and pronunciation. For each component, there are specific descriptions of proficiency ranging from 1-9 band scores. To achieve the purpose of the study, two blind raters were trained to use the speaking rubric and assessed four pilot recordings to become familiar with the scaling system. The scores of the four components were tallied up and divided by four to attain a holistic score of speaking. To enhance the generalizability and reliability of the findings, Intra-class Correlation Coefficients (ICC) of the two raters were calculated to examine the degree of agreement between the raters (see Table One).

Data Analysis

Statistical Package for the Social Sciences (SPSS) version 26.0 was utilized to analyze the data. It was mainly used to calculate descriptive statistics, calculate ICC between the raters, check for the assumption of normality and multi-collinearity, and perform regression analysis. Since data were normally distributed (appendix B), parametric tests such as Pearson correlation and Multiple Linear regression were employed.

Results

Reliability Analysis and Descriptive Statistics

To ascertain sufficient agreement between the two external raters, Pearson correlation was used to calculate inter-rater reliability. Table One displays the outcome of the analysis. The reliability coefficients for the speaking ability scores showed excellent correlations between the raters, reaching 0.84. This suggests that the two raters' scorings were consistent and provided evidence that the task correctly measures speaking ability.

Table 1. *Results of Pearson coefficients for speaking ability*

	Rater 1	Rater 2	Significance
Rater 1	1	.849**	p< .01
Rater 2	.849**	1	p< .01

**. Correlation is significant at the 0.01 level (2-tailed).

Table Two shows the descriptive statistics of the three variables of the study. It displays the mean and standard deviation figures of the subjects' receptive vocabulary size, productive vocabulary size, and overall speaking proficiency. As the table indicates, the participants' performance in the receptive vocabulary size test was satisfactory as they showed mastery of the 1000 and 2000 word frequency levels (M=23.85). Notwithstanding the participants' performance in the receptive dimension, their productive vocabulary size was substantially smaller (M=9.87). For their speaking ability, the table shows that the EFL students' speaking performance was moderate (M= 4.94). These findings reveal that the subjects' receptive vocabulary size is larger than their productive size. Besides, they suggest they mastered the 2000 word frequency level, which is a necessary goal for secondary school EFL learners (Staehr, 2008). This explains their passable speaking performance.

Table 2. *Descriptive statistics for all the variables under study*

	N	Min	Max	M	S.D
SPEAKING	40	1.00	7.50	4.9442	1.61140
UVLT	40	15.00	33.00	23.8567	5.10075
PVLT	40	4.00	15.00	9.8721	2.86274

Receptive and Productive Vocabulary Breadth and EFL Speaking Proficiency

The first question pertained to the link between receptive vocabulary breadth, productive vocabulary breadth, and EFL speaking ability. To answer this research question, data were checked for normality using the Shapiro-Wilk Test (Appendix B). The normality findings revealed that all three variables were normally distributed since the obtained p-values were greater than the standard alpha level (p> .05). Based on this outcome, parametric tests were used to explore the

data. Table Three shows the Pearson correlation results among UVLT, PVLT, and speaking ability. The table indicates that both receptive vocabulary size and productive vocabulary size significantly correlate with speaking ability. Using Plonsky and Oswald's (2014) benchmarks to interpret the correlation coefficients, receptive vocabulary size largely correlated with speaking ability (r= .739, p<.01), while productive vocabulary size weakly correlated with speaking (r=.318, p<.05). Accordingly, there was big effect size between receptive vocabulary breadth and speaking. Conversely, productive breadth and speaking ability showed a small effect size. These findings suggest that the greater the receptive vocabulary size is, the better the performance in EFL speaking contexts.

Table 1. *Pearson correlation coefficients between receptive and productive breadths in relation to speaking ability (n=40).*

Variable	Receptive size	Productive size	Speaking ability
Speaking ability	**.739****	**.314***	1

**. Correlation is significant at the 0.01 level (2-tailed).
*. Correlation is significant at the 0.05 level (2-tailed).

The Contribution of Lexical Breadth to Speaking Proficiency

The second research question was concerned with the joint contribution of receptive and productive lexical breadths to speaking ability. To answer this question, multiple linear regression assumptions such as independence of predictors and multicollinearity were checked. Table Four presents the findings of the joint model. It shows that the receptive vocabulary size and the productive vocabulary size co-jointly explained 60 percent of the variance in the speaking ability of the subjects, as indicated by the adjusted R square (R2= .604, p < 0.000). This model substantiates the role that both receptive vocabulary size and productive vocabulary size play in speaking ability. However, to gain a nuanced understanding of the contribution of the predictor variables, the researchers also explored the individual contributions of receptive vocabulary breadth and productive vocabulary breadth to speaking proficiency. Table Five displays the standardized coefficient (Beta) values of the regression model. It reveals that 72 percent of the variance in speaking scores was uniquely accounted for by receptive vocabulary size (ß=.726, p<.000), while productive vocabulary size only contributed to 28 percent of the variance in speaking ability (ß=.286, p<.05). Since the p-values for both predictor variables are smaller than .05, it follows that their contributions to speaking ability were statistically significant.

Table 2. *Multiple regression model for the joint contribution of the predictor variables*

Model	R	R Square	Adjusted R Square	Std. Error
1	.790[a]	.624	**.604**	1.0143

a. Predictors: (Constant), PROA, Receptive size

b. Dependent Variable: Speaking

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Table 3. Multiple regression coefficient for the independent variables

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	-2.080	.937		-2.219	.033
	ReceptiveSize	.229	.032	**.726**	7.193	.000
	ProductiveSize	.157	.057	**.280**	2.771	.009

a. Dependent Variable: SPEAKING

Discussion

The present study explored the association among receptive vocabulary breadth, productive vocabulary breadth, and EFL speaking ability. It also aimed to examine the contribution of both productive and receptive lexical size aspects to overall speaking ability. That is, receptive vocabulary size and productive vocabulary size functioned as predictor variables, while speaking ability was the dependent variable.

To answer the first research question: To what extent do receptive and productive vocabulary size scores correlate with speaking ability? The findings disclosed that receptive lexical breadth strongly correlated with speaking ability scores (r=.73, p<.01). This means that the more words learners know, even if receptively, the better their speaking performance is. This result is consistent with previous studies, which found positive correlations between receptive size and speaking. To name a few, Miralpeix & Muñoz (2018) found that receptive vocabulary size moderately correlated with speaking performance (r=.48, p<.01). Moreover, Uchihara and Clenton (2018) reported a medium correlation (r=55, p<.01) between receptive vocabulary breadth and speaking performance. More closely related to the current paper's findings, Janebi Enayat and Derakhshan (2021) revealed that receptive vocabulary size strongly correlated with their participants' speaking ability (r=.83, p<..01). This result is further in accord with Derakhshan & Janebi Enayat's (2020) study, which demonstrated that receptive mastery of high-frequency vocabulary plays an essential role in speaking ability. Although the informants in the current study are tenth-grades, the findings showed that vocabulary size positively correlated with their speaking ability, irrespective of their age. However, other studies found dissimilar findings. For instance, Tong et al. (2022) found that receptive vocabulary size did not strongly correlate with speaking ability scores (r=.31, p<..001). This difference in findings might be a result of the number of participants since Tong and colleagues recruited 312 EFL learners. The large sample might have ruled out the variability of individual outliers and provided reliable findings. Hence, it must be borne in mind that conclusions based on small sample sizes should be dealt with utmost caution. To conclude, the findings of the first research question might be explained by the utility of high-frequency words. Since the subjects in this study demonstrated fairly good mastery of receptive vocabulary items (M=23.85, sd= 5.10), it is not surprising that there was a strong correlation between their speaking scores and their UVLT scores. This is predicated on the premise that vocabulary beyond the 2000 word frequency level bears little predictive power in speaking ability (Milton, 2009; Uchihara & Clenton, 2018). Indeed, when speaking, people tend to use common words and avoid low-frequency words and expressions.

As to the productive breadth, the findings revealed a small positive correlation between productive vocabulary size and speaking ability (r=31, p<.05). Thus, the association between

productive breadth and speaking ability was not as strong as with receptive knowledge. This result is in consonance with other studies in the literature that showed that receptive vocabulary size correlated better than productive size with speaking ability. For instance, Kiliç (2019) reported that productive lexical breadth weakly correlated with speaking ability (r=.39, p<.01). Kiliç also reported a greater correlation figure between receptive vocabulary size and speaking ability. An explanation for this might be that receptive vocabulary size develops earlier and faster than productive vocabulary size (Kiliç, 2019). Besides, the form-recognition format of receptive instruments makes knowing a word easier, unlike productive tests which require form-recall knowledge and accurate spelling. Thus, in the current study, the participants are probably still at the stage of developing form-recall knowledge of vocabulary items. Despite the supremacy of the receptive size findings, other researchers disclosed that productive vocabulary size moderately and strongly correlated with speaking ability. To take an example, Tong et al. (2022) found a moderate correlation between productive lexical breadth and speaking proficiency (r=.47, p<.001). Alharthi (2019) and Janebi Enayat and Derakhshan (2021) both reported strong positive correlations between productive vocabulary size and speaking ability (r=.73, p<.001; r=.79, p<.001). These findings reveal that productive vocabulary size is also instrumental in speaking ability, although they are in constant flux.

Nonetheless, it is worth highlighting that the participants in the studies that reported moderate and strong correlations between productive size and speaking recruited EFL university students with upper-intermediate (B2) or advanced (C1) levels of proficiency. On a final note, in the present context, since the productive vocabulary size of our participants was very low (M=9.87), it could be argued that the participants might have known the words but were not able to provide the correct spelling (form). Thus, they underperformed in the PVLT. Another reason for this underperformance could be the nature of the test. To expound, the PVLT starts with 2000 word frequency level, discarding the first thousand words. Hence, it might have been too challenging for EFL tenth-grade high school students.

To answer the second research question: To what extent do receptive and productive vocabulary size scores explain the variance in learners' speaking ability? The results showed that the two predictor variables collectively explained R2= .60 of the variance in the subjects' speaking proficiency, which is considered large. This finding corroborates the vital status of lexical mastery of high-frequency words in speaking ability. It also shows that irrespective of other variables such as error in measurement, grammatical knowledge, individual differences, and duration of exposure to English, vocabulary size explained more than half of the variance in the participants' speaking performance. Another overarching finding of the study was the strong influence of receptive vocabulary size on the dependent variable. Differently put, while investigating receptive vocabulary size with speaking, it explained 72 percent of the variance in speaking. However, when holding receptive vocabulary size constant and only investigating productive size independently, it only explained 28 percent of the variance in speaking performance. This means that receptive vocabulary size, in isolation, demonstrated stronger influence on speaking than productive vocabulary size did. Compared to other studies, our findings are in agreement with Koizumi and In'nami (2013) who found that vocabulary knowledge accounted for 60 percent of the variance in speaking ability. Janebi Enayat and Derakhshan (2021) also found that receptive size, productive size, and lexical depth predict (R2= .71, p <.001) 71 percent of speaking ability. Interestingly, they found that receptive vocabulary size when investigated independently had a more substantial influence on speaking ability than that of productive size. In the same vein, Tong et al. (2022)

investigated receptive and productive vocabulary size in relation to speaking. Their findings were comparable to our study R2= .47.

On the other hand, our findings are not in accord with other studies in the literature. Uchihara and Clenton (2018), for instance, found that lexical knowledge only accounted for 29 percent of the variance in speaking ability. Furthermore, Kiliç (2019) found that lexical knowledge only accounted for R2=.167 (16.7 percent) of the variance in speaking ability. Surprisingly, Kiliç's findings suggest that vocabulary depth had the strongest effect on speaking proficiency, accounting for around 11.3 percent. In contrast, receptive vocabulary breadth had the most negligible contribution of around 1.4 percent.

By way of conclusion, the results of the present study further substantiate the role of vocabulary size, at its receptive and productive modes, in speaking ability in the Moroccan EFL context. They shed light on the association between tenth-grade EFL students' vocabulary size and speaking performance. While statistically significant correlations were found between receptive lexical breadth and productive breadth in relation to speaking proficiency, the takeaway conclusion from this study is that receptive vocabulary size had a significant influence on secondary EFL learners' speaking ability. However, this does not entail that productive vocabulary size is less crucial. It simply denotes that meaning-recognition knowledge or basic mastery of vocabulary items aids elementary EFL students when speaking.

The present study's findings suggest several significant implications. Most important of which is that vocabulary instruction should occupy a large proportion in EFL language classes, and a threshold for vocabulary breadth should be determined. For example, a receptive vocabulary size of 2000 or more should be a starting goal for junior high school students to speak with a reasonable degree of proficiency. To achieve this goal, EFL instructors are exhorted to explicitly teach the most frequent words to their novice high school students. Another contribution of this study is the acknowledgement of the primacy of receptive or meaning-recognition vocabulary knowledge in speaking. Plainly put, while collocations, idioms, and lexical associations (i.e., vocabulary depth) are also crucial to teach, the findings of this study demonstrate that receptive vocabulary size contributes the most to speaking ability of EFL learners. This implication might be important at novice levels of proficiency, but with upper-intermediate and advanced learners there are other variables that might assist in speaking proficiency such as strategic competence, discourse management, topic nature, etc.

However, this study is not without limitations. The first limitation that mitigates the generalizability of the results pertains to the small sample size of participants (N=40). These participants were recruited using convenience sampling methods and they form a homogenous group because they all belong to the same educational institution. Second, the vocabulary dimension of breadth investigated in this paper could potentially affect the conclusions of this study. To expound, vocabulary size is only a single dimension of vocabulary knowledge. Thus, other lexical dimensions such as depth and automaticity might also contribute to the participants' overall speaking ability. Third, the use of the PVLT to measure productive knowledge of vocabulary is also another limitation in the context of our study. It might have undermined the participants' true productive breadth because it samples words starting from the 2000 frequency-band. Hence, the first band, which is of utmost importance, was discarded. Besides, the current study relied on a single speaking elicitation technique, which is an IELTS speaking task. This might also constrain the findings of this endeavor. Finally, there is a mismatch between the mode of vocabulary elicitation and the nature of speaking ability. Both the UVLT and PVLT measure

orthographic form of vocabulary knowledge, whereas the IELTS task assesses the participants' spoken form. Taken together, these limitations should be taken into account prior to making any generalized conclusions from this study.

Concerning new research avenues, researchers are exhorted to target different lexical competence dimensions such as receptive and productive vocabulary depth. They are also invited to examine the contribution of the spoken modalities of vocabulary size and depth as Uchihara and Clenton (2023) called for. By way of conclusion, it might be worthwhile to employ objective measures such as lexical diversity, lexical density, sophistication and so on in rating speech samples. This particular measure of rating has received less scholarly attention compared to the human rating approach.

Conclusion

This study explored the link between receptive vocabulary size, productive vocabulary size, and EFL speaking ability of Moroccan EFL tenth-graders. It also inspected the concurrent contribution of receptive and productive breadths to speaking ability. The results of this study revealed a strong positive correlation between the participants' receptive lexical size and their speaking proficiency. Conversely, a relatively weak association was found between productive vocabulary size and speaking proficiency. The findings also indicated that the receptive and productive lexical sizes of EFL learners contributed to their speaking ability. Moreover, they substantiated the role of vocabulary size and high-frequency words in EFL speaking ability.

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About the Authors

Agrram Abdelaziz is a doctoral candidate at the University of Chouaib Doukkali, El Jadida, Morocco. He is also a Cambridge Speaking examiner of different proficiency levels. Mr. Agrram obtained his MA from the Faculty of Education, Rabat, Morocco. His areas of interest are vocabulary measurement, acquisition, and teaching. He is also interested in educational assessment and pedagogy. ORCID ID: https://orcid.org/0000-0003-3999-8608

Mokhtari Najat Ph,D is a Full Professor at the Department of English at the Faculty of Letters and Humanities Chouaib Doukkali, El Jadida. Her research interests are related to the field of Applied Linguistics.

Laaboudi Daouia Ph,D is a Full Professor at the Faculty of Letters and Humanities Chouaib Doukkali, El Jadida. Pr. Laaboudi is the current director of the Applied Language and Culture Studies Doctoral Laboratory. Her areas of interest are also related to Applied Linguistics, Sociolinguistics, and pedagogy.

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Appendices

Appendix A.

Speaking task

Describe a free time activity you like to do.
You should say:

- what you do
- who you do it with
- where you do it

and explain why you like to spend your free time this way.

Appendix B

Normality test

Table 6. Findings of normality

Tests of Normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Receptivesize	.131	40	.082	.953	40	.097
Speaking	.086	40	.200*	.979	40	.636
PROA	.074	40	.200*	.976	40	.532

*. This is a lower bound of the true significance.

a. Lilliefors Significance Correction