OPEN ACCESS

Australian Journal of Applied Linguistics
ISSN 2209-0959
https://www.castledown.com/journals/ajal/

Australian Journal of Applied Linguistics, 7 (3), 1996 (2024)
https://doi.org/10.29140/ajal.v7n3.1996

The contribution of vocabulary breadth and depth to narrative writing ability: A partial least squares structural equation modelling approach

AGRRAM ABDELAZIZ[a]

MOKHTARI NAJAT[b]

LAABOUDI DAOUIA[c]

[a,b,c] The Applied Language and Culture Studies Lab, Chouaib Doukkali University, El Jadida, Morocco

Abstract

Despite the well-established role of lexis in proficiency in the four skills, a great deal of research has focused on the importance of vocabulary breadth and depth in reading. Therefore, the neglect of productive skills has motivated recent calls to inspect the impact of lexical dimensions on writing ability. Using Partial Least Squares Structural Equation Modelling (PLS SEM), this study examines the contributions of vocabulary size and depth aspects to EFL learners' narrative writing ability. For this purpose, the researchers administered the Updated Vocabulary Levels Test (the UVLT), the Productive Vocabulary Levels Test (the PVLT), the Word Associates Test (the WAT), and a narrative writing task to 77 EFL undergraduate students. The participants' scripts were scored, following IELTS analytical band descriptors. Results of the PLS SEM disclosed that vocabulary size and depth explained around 45% of the variance in the writing scores of the subjects. They also revealed that, among the variables examined, receptive vocabulary size was the only statistically significant factor that contributed the most to writing ability. The implications for writing assessment and instruction are discussed.

Keywords: narrative writing; PLS SEM; vocabulary depth; vocabulary size; writing ability

Introduction

It is not an overstatement to claim that lexis is an essential component in second and foreign language learning. Several vocabulary acquisition experts hold the view that effective communication is not achievable without lexis and that learners with large vocabulary sizes are highly proficient and apt learners (Laufer, 1998; Meara, 1996a; Schmitt, 2014; Wilkins, 1972). This supposition accentuates the role of lexical competence in language learning and language

proficiency. In fact, research on vocabulary breadth and depth has gone beyond language learning to explore other territories such as speech pathology assessments (Westby, 2024). Such research highlights the importance of vocabulary assessment not only in education, but also in the area of language disorders. Concerning educational research, a substantial number of researchers investigated the degree to which vocabulary size and depth relate to reading (Nation, 2006; Pan, 2023; Taşçı & Turan, 2020), listening (Han & Qian, 2024; Stæhr, 2009; Teng, 2014a), speaking (Agrram et al., 2024; Enayat & Derakhshan, 2021), and writing ability (Dabbagh & Enayat, 2019; Therova, 2023; Tong et al., 2023). Whereas the largest share of vocabulary breadth and depth studies has been preoccupied with receptive skills, particularly reading (Miralpeix & Muñoz, 2018; Teng & Mizumoto, 2023), a growing body of research has started to consider the role vocabulary dimensions (i.e., breadth and depth) play in productive skills, namely speaking and writing.

In comparison to the abundance of studies on receptive skills, few attempts have been made to explore the combined role that recognition and productive lexical breadths and vocabulary depth play in productive skills, especially in writing ability (Allagui & Al Naqbi, 2024; Karafkan et al., 2022; Sukying, 2023; Wu et al., 2019). The literature reveals that, until recently, writing ability has rarely been examined in connection with receptive and productive lexical sizes and lexical depth (Allagui & Al Naqbi, 2024; Karafkan et al., 2022; Pan, 2023; Sukying, 2023; Tong et al., 2023). Most studies focused exclusively on one vocabulary breadth or depth aspect with respect to writing performance (Atai & Dabbagh, 2010; Baba, 2009; Batty, 2007; Boudribila, 2019; Miralpeix & Muñoz, 2018; Stæhr, 2008). This culminated in a literature lacuna pertaining to the combinatory impact of different lexical dimensions on writing ability. Moreover, most of the research examining the combinatory intersection between vocabulary knowledge dimensions and writing ability employed argumentative or expository tasks (Allagui & Al Naqbi, 2024). For instance, Atai and Dabbagh (2010), Varnaseri and Farvardin (2016), and Sukying (2023) employed argumentative tasks to inspect the relationship between word knowledge dimensions and writing ability. On the other hand, Dabbagh and Enayat (2019) targeted descriptive writing performance. This entails that more research is needed to examine other writing genres such as summarizing (Baba, 2009), reading-to-write ability (Pan, 2023), and narration (Karafkan et al., 2022).

This study aims to investigate the joint effect of receptive vocabulary size, productive vocabulary size, and receptive vocabulary depth on narrative writing ability. To clarify, narrative writing requires writers to narrate sequences of events, engage readers by portraying familiar or unexpected experiences, conveying emotions, and contributing to understandings (Butt et al., 2012). For EFL learners to narrate, they would need to possess large vocabulary sizes and rich lexical networks (i.e., depth). For instance, having nuanced understandings of lexical items (depth) is a prerequisite to express emotions and describe people. Similarly, large receptive and expressive vocabulary sizes are needed to narrate sequences of events and to engage readers. Hence, this paper set out to examine how dimensions of lexical competence explain performance in the participants' narrative productions.

Literature Review

Theoretical Relevance of Lexis in Writing Ability

Researchers have long grappled with the construct of lexical competence in the field of vocabulary acquisition and measurement. Within dimensional models, lexical competence is typically operationalized as vocabulary breadth, depth, and fluency (Daller et al., 2007; Haastrup & Henriksen, 2000; Meara, 1996a). In these frameworks, vocabulary breadth pertains to the number of individual lexical items that one knows in recognition or production, while depth is

concerned with how well these lexical units are mastered (Anderson & Freebody, 1981). Both breadth and depth are widely supported as essential components of writing ability (Dabbagh & Enayat, 2019; Read, 2004; Schmitt, 2014). To elaborate, numerous researchers contend that writing is lexically driven. Nation (2001), for example, argued that vocabulary directly affects impressionistic scoring of written quality. Findings have consistently demonstrated that there is a positive association between breadth of the lexicon and writing proficiency (Karafkan et al., 2022; Tong et al., 2023; Wu et al. 2019). There is even evidence suggesting that vocabulary size plays a pivotal role in L2 summary writing, an under-researched genre (Allagui & Al Naqbi, 2024).

Grabe and Kaplan (1996) further emphasized the role of lexis stating that "vocabulary development not only supports reading and writing, it also promotes syntactic flexibility and creates a foundation for further learning" (p. 275). It is, therefore, axiomatic among learners of languages that lexical knowledge is an indispensable component of effective writing ability, and it follows that most if not all beginning learners of foreign languages attribute poor writing ability to vocabulary deficiencies (Laufer, 2023). However, despite the theoretical relevance on lexical competence in writing, successful writing is also contingent upon the interplay between lexis and other factors like genre-awareness, audience, editing strategies, to name a few.

Contribution of Lexical Knowledge to Writing Ability

Considering the status of lexis in writing ability, few studies have examined the relationships between receptive/productive lexical sizes, vocabulary depth, and writing ability. Most of the research has centered on the association between one aspect of lexical competence, vocabulary breadth, and writing ability. These studies have consistently found that receptive vocabulary size predicts and positively correlates with writing performance. As a case in point, Stæhr (2008) identified a substantial correlation between receptive lexical breadth and writing proficiency among 88 Danish EFL learners, with breadth explaining 52% of the variance in writing scores. Similarly, Miralpeix and Muñoz (2018) reported that receptive lexical size fairly correlated with writing ability and explained 30% of its variance among 42 Spanish EFL learners. In a relatively recent study, Boudribila (2019) showed that receptive breadth strongly correlated with writing proficiency in a sample of 464 Moroccan EFL students. Taken together, these studies emphasize the significance of receptive vocabulary breadth in writing proficiency. However, they fall short in as far as lexical competence is concerned. That is, these studies only focused on one aspect of vocabulary knowledge, which is receptive vocabulary size, thereby ignoring other dimensions such as vocabulary depth.

Compared to vocabulary breadth research, vocabulary depth has captured less interest, with only two studies investigating its connection to writing proficiency. Batty (2007) examined vocabulary depth and its association with writing ability and found that vocabulary depth weakly correlated with writing and explained 22% of the variance in test scores. Likewise, Atai and Dabbagh (2010) found that vocabulary depth measured by the WAT predicted 25% of the variance in the writing scores of their upper-intermediate students. Notably, their findings revealed that vocabulary depth did not play any role in the lower-intermediate students. Such evidence further corroborated Meara's (1996a) claim that lexical depth is more important and stronger only when learners have a large vocabulary size. This might explain why only the upper-intermediate group's findings were significant. It is largely because they have larger vocabulary sizes than their lower-intermediate peers. Collectively, these studies showed that vocabulary depth also correlates with and predicts writing ability. Nonetheless, these two studies also discarded the important role that other vocabulary dimensions and aspects play in writing, creating a literature lacuna with respect to the concurrent contribution of breadth and depth to writing ability.

In other studies, researchers examined the collective contributions of recognition lexical size and receptive vocabulary depth to integrated writing tasks, namely summarizing. To exemplify, Baba (2009) explored how receptive lexical breadth, gauged by the VLT, and depth, measured by the WAT, relate to performance in summary writing performance of 68 Japanese EFL students. The results revealed that receptive lexical breadth and depth moderately correlated with summary writing, but they did not explain the variance in summary writing ability scores. This entails that vocabulary knowledge might be associated with quality summary writing, but it cannot explain the variance in writing scores. However, Allagui and Al Naqbi (2024) found that vocabulary size positively correlated with and predicted summarizing ability, whereas depth did not predict summary writing in a sample of 73 EFL students. Such finding supports the role of having an extensive lexical repertoire in summarizing. These contrasting findings could be attributed to the nature of the receptive vocabulary size test employed in the two studies. While Baba's study employed the VLT, a meaning recognition test, Allagui and Al Naqbi utilized a yes/no word recognition test of vocabulary size. This mismatch might have potentially inflated Allagui and Al Naqbi's participants' results because word recognition tests are easier than meaning recognition tests. Word recognition simply requires the participants to check whether they recognize the word or not. Despite their inconsistent results, these two studies are limited because they discarded the potential role that productive vocabulary size might play in predicting writing ability, especially given that writing is a productive skill.

Focusing on the descriptive genre, Dabbagh and Enayat (2019) used the VLT and the WAT with 67 EFL students to examine their impact on descriptive writing ability. Their results indicated that receptive breadth alone explained 18% of the variance in the subjects' descriptive writing performance. However, when examined concurrently, the contribution of breadth and depth was not statistically significant, although Pearson correlation findings showed moderate correlations among breadth, depth, and writing scores. One reason to explain why vocabulary breadth contributed more than depth to writing ability could be the use of a writing assessment scale that ignored vocabulary depth aspects such as collocations, word parts, and associations (Read, 2007). Despite Dabbagh and Enayat's (2019) important findings, they also discarded the vital function of productive breadth in writing. In this respect, Schmitt's (2014) exhorted researchers to explore the simultaneous contribution of different lexical dimensions, including receptive and productive vocabulary sizes and depth to productive skills.

Building upon Schmitt's (2014) call, few recent studies have examined the concurrent contribution of receptive and productive vocabulary sizes as well as vocabulary depth with respect to different genres of writing ability, namely descriptive, narrative, and argumentative. This comprehensive trend of research demonstrated that productive vocabulary size played a more important role than receptive vocabulary size in predicting writing scores. However, it is worthy to note that there are few exceptions where receptive breadth remained the strongest predictor of writing quality. For example, Wu et al. (2019) assessed the association among receptive and productive vocabulary breadths, receptive vocabulary depth, and writing proficiency in a sample of 267 Chinese EFL junior-high school students. Their findings revealed that productive vocabulary breadth and receptive vocabulary breadth showed more predictive power in comparison with lexical depth. They also indicated that productive vocabulary breadth had the largest contribution to writing ability, followed by receptive vocabulary breadth. A more recent attempt by Tong et al. (2023) employed Structural Equation Modelling to inspect the contribution of four vocabulary knowledge aspects, including productive vocabulary depth, to argumentative writing proficiency of 312 Chinese university students. Their findings disclosed that the simultaneous contribution of all vocabulary aspects to argumentative writing was around 51%. To further probe these contributions, Tong and colleagues analyzed the separate

contributions of each lexical variable to writing ability. Their results disclosed that productive vocabulary depth (β = .36, p < .001) and productive breadth (β = .32, p < .001) played a more important role than receptive vocabulary depth (β = .24, p < .001). Surprisingly, they also found that receptive vocabulary breadth explained the least variance (β = .19, p < .001) in argumentative writing ability. Building on this, Pan (2023) also reported that productive orthographic vocabulary breadth alone explained 32.7% of the variance in reading-to-write ability, while productive depth added an extra 6.7% receptive with receptive breadth only contributing 1.5% explanatory power. Cumulatively, these studies converge to support the importance of productive vocabulary knowledge in writing ability. However, They highlight the inconclusiveness of the findings of the extant scholarship, thus calling for more studies examining the effect of productive vocabulary breadth, using other methodological approaches.

In contrast, Sukying (2023), who examined the contribution of receptive and productive vocabulary breadths and depth to argumentative writing, found that despite the positive correlations among all the vocabulary variables and writing performance, vocabulary depth emerged as the sole predictor of argumentative writing, accounting for 31% of the variance in writing scores. This finding is not in line with the extant literature because the authors reported that their scale to assess argumentative writing encouraged assessors to focus on lexical depth features such as lexical sophistication and vocabulary range among many other criteria. In a different attempt, Karafkan et al. (2022) investigated the concurrent contribution of receptive vocabulary breadth, productive vocabulary breadth, and receptive lexical depth to narrative, descriptive, and argumentative genres in a sample of 70 EFL informants. They reported moderate to strong correlations among the vocabulary components and the three types of writing tasks. Their findings also disclosed that vocabulary dimensions could explain around 40% to 44% of the variance in writing scores. To further examine these findings, the β coefficients disclosed that receptive vocabulary size was the strongest predictor of descriptive, narrative, and argumentative tasks, followed by vocabulary depth. However, productive vocabulary size was not statistically significant. This shows that receptive vocabulary size and depth predicted writing performance across the three text types (i.e., narrative, descriptive, and argumentative), whereas productive vocabulary breadth was not important, refuting the findings of other studies conducted by Wu et al. (2019) and Sukying (2023). This further strengthens the need for more research to examine the intricate relationship between lexical competence and writing proficiency.

Building on this review, it was shown that there was a progression of knowledge in vocabulary and writing research. That is, researchers moved from focusing on one dimension of vocabulary knowledge in relation to writing to more comprehensive attempts. However, some lacunas have been identified. First, the findings of the literature are inconclusive, indicating that more research is needed. Second, the number of studies examining the collective contribution of different vocabulary knowledge dimensions and aspects is very scarce. Third, except for Tong et al.'s (2023) paper, all the reviewed studies adopted first generation statistical tests (i.e., regression), creating the need to employ other robust statistical tests like SEM .

Current Study

Despite the recent surge in interest in vocabulary breadth and depth, their effect on writing ability remains relatively unexplored. What is more, the number of studies on the impact of different vocabulary dimensions on writing ability, especially narrative writing, is very limited. Furthermore, the findings of the extant literature are in constant flux; some studies are in favor of receptive vocabulary depth (Sukying, 2023), while other attempts showed that productive vocabulary size (Pan, 2023; Tong et al., 2023; Wu et al. 2019) is more important. However,

most studies favor receptive vocabulary size in its ability to explain the variance in different writing genres (Allagui & Al Naqbi, 2024; Dabbagh & Enayat, 2019; Karafkan et al., 2022, among other colleagues). Therefore, using PLS-SEM for its robustness and advantages over multiple linear regression, this study aims to examine the simultaneous contributions of receptive/productive breadths and lexical depth to narrative writing ability. Additionally, given the limited attention devoted to narrative writing ability, this study investigates whether these different lexical dimensions explain the variance in the participants' essays.

Research Questions

To the best of our knowledge, no previous study has investigated the individual and concurrent contributions of different lexical dimensions to writing ability, using PLS SEM. The dominant trend is to use multiple linear regression and correlation analyses. By employing PLS SEM, this study seeks to address the following research questions:

RQ1: To what extent do receptive vocabulary size, productive vocabulary size, and vocabulary depth scores separately contribute to narrative writing ability?

RQ2: To what extent do receptive vocabulary size, productive vocabulary size, and vocabulary depth scores concurrently contribute to narrative writing ability?

Materials and Methods

Participants

Initially, the participants of this study were 110 first-year Moroccan higher education students at the National School of Applied Sciences Berrechid, Morocco. However, because the data collection phase spanned over 4 weeks and participation was voluntary, 33 students either dropped out or did not attend consistently. Thus, the number of informants decreased to 77 students. The participants were both female and male students who are native speakers of Moroccan Arabic, and their average age was 19.56 with a standard deviation of around 2.29. With respect to their proficiency level, the receptive vocabulary size of the participants (M = 84.62, SD = 22.94) indicates that they are intermediate learners of English since they mastered around 70% of the most frequent 5000-word families. It is worthy to add that during the data collection phase, the subjects had been studying English as a Foreign Language for at least 4 years in the public sector.

Two doctoral students in Applied Linguistics, who were also experienced EFL teachers with more than 6 years of experience, participated in this study as assessors. They had previously taught writing modules of IELTS at different language centers. This indicates that they had the requisite experience with IELTS writing band descriptors, which makes them qualified to assess writing.

Instruments

Updated Vocabulary Levels Test (UVLT)

The UVLT is a newer form of the VLT, originally developed by Nation (1983) and subsequently updated by Schmitt et al. (2001); it was regarded as the most popular test of vocabulary knowledge (Read, 2000). The UVLT measures recognition knowledge of the most frequent 5000 high frequency word families, extracted from Nation's (2012) wordlists. It employs a

matching format, using 10 three-item clusters per band. Figure 1 shows a sample of a cluster from the UVLT. The testees are given 10 clusters, consisting of 3 items respectively, and have to check the correct option. Webb et al. (2017) reported that the UVLT has a Rasch reliability of .96 and item separation of 4.72. This suggests that it is highly reliable and differentiates testees with varying abilities.

The PVLT was developed by Laufer and Nation (1999) to measure productive vocabulary knowledge, using form-recall items. It employs a gap-filling format with a non-defining sentence where test-takers must write the missing words. For ease, Laufer and Nation provided the first letter or letters to guide testees. Figure 2 shows an example of the PVLT format. The current study employed the 2000, the 3000, and the 5000-word bands. Each band comprises 18 items, making up a total of 54 items. The participants were asked to be very careful with spelling because each misspelled word is granted a 0. Laufer and Nation (1999) reported that the PVLT demonstrated an excellent reliability estimate of KR-21 = .86. Their ANOVA findings showed that the test differentiates learners with different ability levels, which serves as evidence of validity.

To measure receptive vocabulary depth, Read (1998) designed the WAT. This test is predicated on the concept of word association. It provides a target word (an adjective) followed by 8 words, divided into two groups of 4 words. There are 4 correct words in every item; these correct options are either paradigmatically (i.e., synonymy/polysemy) or syntagmatically (i.e., collocations) related to the target word. For example, Figure 3 displays a sample from the WAT of the word *sudden*. The four first words are paradigmatically related and denote lexical relations of synonymy, whereas the last four items are collocates of the adjective *sudden*. Overall, the WAT measures depth of vocabulary knowledge, using 40 items. To account for guessing, Read (1998) designed the test in a way where there could be 3 synonyms and 1 collocate, 3 collocates and 1 synonym, 2 synonyms and 2 collocates, etc. It is important to highlight that there are always 4 correct answers. Qian (2002) found that the WAT demonstrated an excellent alpha reliability estimate of .88.

2,000 Word Level

	capital	career	committee	exam	fence	option
choice						
job						
test						

Figure 1 *UVLT Sample 4.2.2. Productive Vocabulary Levels Test (PVLT).*

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 Sample 4.2.3. Word Associates Test (WAT).*

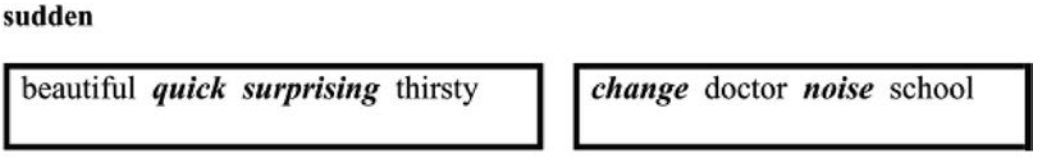

Figure 3 *WAT Sample.*

Narrative Writing Task

To gauge the participants' writing ability, a personal narrative task was developed. The participants were asked to write an essay of at least 300 words about the lessons they learned from someone who has had a profound influence on their lives (see Appendix 1). The participants were explicitly instructed to start with an introduction where they identify this person and then, *narrate* the lessons they learned from following their example. In this regard, the students narrated personal examples from their lives, which in turn allows them to employ their lexical repertoire, without constraints.

Writing Scale: IELTS Descriptors

Because analytic scales are known for their high reliability and appropriateness for L2 writers (Weigle, 2002), this study utilized IELTS' public version band descriptors (see Appendix 2) to assess the subjects' writing ability. This scale comprises four components: task achievement, coherence and cohesion, lexical resource, and grammatical accuracy. These four elements of the scale are equally weighted with a maximum score of 9.

Procedure

Data Collection

In the first session, the participants took the UVLT and were instructed that participation in the study was voluntary; on average, this phase spanned approximately 30 minutes. Subsequently, during the next session, the participants received the PVLT test and finished it in around 25 minutes. To mitigate testing fatigue effects, the WAT was administered in the third week, also lasting around 30 minutes. Finally, in the fourth week, the subjects engaged in a narrative writing task, which took around 90 minutes. They were explicitly instructed to concentrate on narration and refrain from incorporating descriptive features within their writing compositions.

Essay Scoring

As noted before, two doctoral candidates were tasked with evaluating the participants' narrative scripts, using IELTS public band descriptors. Following Weigle's (2002) guidelines of rater training, a session was held with the raters to describe what is meant by the descriptors in the statements of the scale, what is an appropriate introduction, minor mistakes, etc. In this session, the assessors were given the chance to raise problems and discuss their points of view, using two scripts to calibrate their ratings. After the calibration session, each of the assessors gave a score of 1–9 for each of the components of IELTS' band descriptors. The overall performance of each participant was holistically computed by tallying their scores on each component and dividing them by 4. It is worthy to note that in congruence with ethical concerns, the researcher covered the informants' personal information.

To ensure rater reliability, Spearman correlations were employed to assess the reliability of the assessors' ratings. As indicated in Table 1, the agreement between the two raters was

Table 1 Pearson correlations between the raters.

	Task R²	C & C²	LR²	GR²	OW²	Significance
Task response¹	.858					.000
Coherence & cohesion¹		.735				.000
Lexical resource¹			.892			.000
Grammatical range¹				.795		.000
Overall writing¹					.868	.000

Note: 1 = rater 1; 2 = rater 2.

acceptable for coherence and cohesion and grammatical ranges scores, while the correlation of task response and lexical resource was very good. Overall, the correlation between the two raters was .86, which is very good. In addition, Intraclass Correlation was computed to inspect the agreement between the two blind raters' scoring; the rater agreement was .97.

Hypothesized Model

The measurement model that is adopted in this study is reflective. As Figure 4 shows, the constructs point towards their items. In PLS SEM research, reflective models simply indicate that the constructs are not distinct and that they correlate with each other (Hair & Alamer, 2022). In the present study, receptive vocabulary size correlates with productive vocabulary size, and vocabulary size in general correlates with vocabulary depth. This indicates that it is plausible to hypothesize that these lexical dimensions predict performance in writing. Drawing on the existing literature, vocabulary knowledge dimensions correlate and explain the variance in different genres of writing ability (Allagui & Al Naqbi, 2024; Baba, 2009; Dabbagh & Enayat, 2019). The only study that tested a hypothesized model for the effect of vocabulary knowledge and writing quality was conducted by Tong et al. (2023). They found that vocabulary knowledge, especially productive aspects, played a major role in argumentative writing quality. Hence, this study attempts to explore and test the hypothesized reflective model in Figure 4.

Data Analysis

Data were analyzed using the Statistical Package for the Social Sciences (SPSS) version 26 and Smart PLS4 version 4.0.9.6. SPSS was used to calculate Pearson correlations and Intraclass Correlation between the raters and descriptive statistics, while Smart PLS4 was employed to conduct PLS SEM calculations.

In this article, PLS SEM is employed to evaluate the structural model that is hypothesized (Figure 4). PLS SEM is an approach that allows researchers to assess complex theoretical models and test hypotheses between constructs and their indicators (Hair et al. 2020). It has received significant attention in the area of education and social sciences in these past few years. The tendency to employ PLS SEM is because it does not presuppose that data has to be normally distributed (Hair et al., 2019; Willaby et al., 2015). In fact, PLS SEM works best when sample sizes are modest and data are not normally distributed (Hair et al., 2020; Sparks & Alamer, 2022). Besides, PLS SEM is an approach that has shown high degrees of statistical robustness compared to other co-variance-based models of structural equation modelling. Finally, whereas co-variance-based SEM is based on the assumption of goodness-of-fit, PLS SEM does not hinge

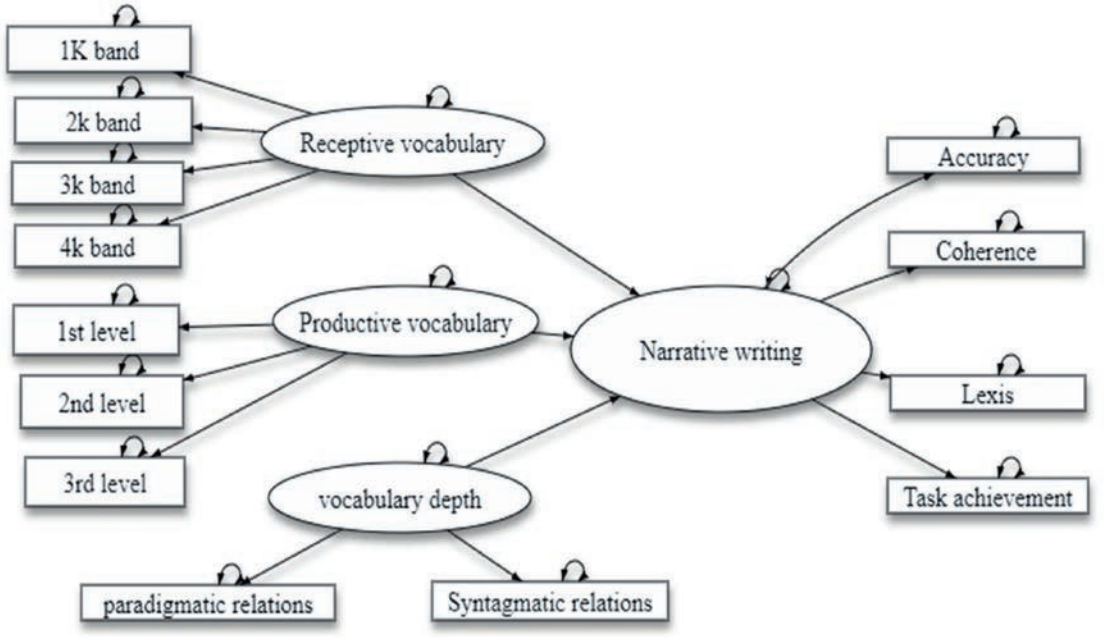

Figure 4 *Hypothesized model of the contribution of breadth and depth to writing ability.*

on any specific levels of fit to evaluate proposed models (Hair et al. 2020). In this respect, Hair et al. (2020) proposed four criteria to evaluate reflective models using PLS SEM without relying on goodness-of-fit tests.

Results

Descriptive Statistics

Table 2 reveals the descriptive statistics of the participants' performance in all the instruments, including maximum possible scores, means, and standard deviations. The table shows that the participants' receptive vocabulary breadth was satisfactory (M = 84.64, MPS = 120), and the measure of dispersion (SD = 22.29) suggests a moderate level of variability in test scores. This means that their performances clustered around the mean. Incongruently, the participants' productive vocabulary size was not very large (M = 16.07, MPS = 56, SD = 8.69), and they showed a great deal of variability. With respect to vocabulary depth, the subjects' scores were very low (M = 50.98; MPS = 160, SD = 25.10) and were also characterized by a high dispersion level. Lastly, the informants' scores on writing ability were fairly passable (M = 6.11, MPS = 9, SD = 1.46). Considering their dispersion, the students' scores on writing were clustered around the mean and showed little variability. Overall, the descriptive statistics provided a comprehensive profiling of the informants' performance on all the latent variables of the study. They showed that the participants' receptive vocabulary size was high and that their writing ability level was moderate, while their productive breadth and receptive depth were unsatisfactory.

Assessment of the Measurement Model

This study utilizes Hair et al.'s (2018) guidelines and thresholds to evaluate the proposed model of vocabulary dimensions and their effect on narrative writing ability. Hair and colleagues'

Table 2 Descriptive statistics for the participants' scores on all tests.

	MPS	M	SD	N
UVLT1	30	27.7013	2.91577	77
UVLT2	30	23.4026	5.82702	77
UVLT3	30	17.8442	7.86576	77
UVLT4	30	15.6753	9.33223	77
R size	120	84.6234	22.94274	77
Productive1	18	8.8961	3.49279	77
Productive2	18	4.5714	3.17237	77
Productive3	18	2.6104	3.07432	77
Productive size	54	16.0779	8.69326	77
Paradigmatic relations		23.9091	12.075619	77
Syntagmatic relations		27.0779	13.71396	
WAT	160	50.9870	25.10740	77
Overall writing	9	6.1169	1.46692	

Note: MPS = maximum possible score.

guidelines comprise evaluating the outer loadings of the measurement model, assessing internal reliability using Cronbach's alpha and Composite Reliability, addressing convergent validity using Average Variance Extracted (AVE) values, and assessing discriminant validity through the Heterotrait-Monotrait (HTMT) ratio. It is worthy to point out that several researchers opt for goodness-of-fit levels to evaluate reflective models, but Hair et al. (2022) argued that they are not transferrable to PLS SEM. Therefore, these tests were discarded from the current analysis.

To clarify, Hair et al. (2018) set strict thresholds to evaluate reflective models. First, they stipulated that outer loadings should be >.70 to suggest that the construct explains greater than 50% of the variance in its corresponding indicators. Second, both Composite Reliability and Cronbach's alpha should fall in the region of .70 and .94. Hair et al further noted that exceeding .95 is undesirable and implies redundancy. Third, for convergent validity, the AVE should also be >.50%; it indicates that the construct accounts for at least 50% of the variance in its indicators. The last threshold has to do with discriminant validity. Hair and colleagues instructed that the HTMT ratio should be <.85. Differently put, if the HTMT is less than .85, it means that constructs are conceptually different from each other.

After establishing the adopted thresholds, the following paragraphs present the findings of the PLS SEM analysis. Table 3 shows the different aspects that are observed to assess the hypothesized model in Figure 4. It depicts the outer loadings, Cronbach's Alpha and Composite Reliability, and the AVE. Due to not meeting the required thresholds for outer loadings >.70, band 1 of receptive vocabulary size was discarded from the structural modelling analysis. Likewise, the accuracy indicator of writing was removed from the structural model for exceeding the threshold of internal consistency >.95, which suggests that it is redundant. Thus, as can

Table 3 Constructs' outer loadings, reliability, and convergent validity indicators.

Latent Constructs	Indicators	T value	Outer loadings	Cronbach's Alpha	Composite Reliability	AVE
Receptive vocabulary size	Band1	D1	D1	0.890	0.898	0.732
	Band2	29.326	0.883			
	Band3	56.168	0.928			
	Band4	43.572	0.904			
Productive vocabulary size	Band1	29.352	0.877	0.873	0.898	0.708
	Band2	73.792	0.940			
	Band3	22.005	0.859			
Vocabulary depth	Syntagmatic relations	129.603	0.975	0.945	0.945	0.896
	Paradigmatic relations	109.485	0.972			
Writing ability	Task achievement	77.647	0.956	0.952	0.952	0.868
	Lexical resource	74.435	0.944			
	Accuracy	D2	D2			
	Coherence	126.263	0.965			

Note. D1 = item deleted due to high outer loading factor; D2 = item deleted due to high reliability estimates.

Table 4 Findings of discriminant validity through HTMT.

	Productive size	Receptive size	Depth	Writing ability
Productive size				
Receptive size	0.627			
Depth	0.550	0.565		
Writing	0.539	0.703	0.414	

be observed in Table 3, the outer loadings are well above the cutoff point of .70 and have a T value greater than 1.96. Concerning internal consistency, the findings of Cronbach's Alpha and Composite Reliability reveal that the latent constructs' internal consistency are satisfactory for all the indicators. Finally, the AVE results of all the indicators are well above the threshold of >.50, which indicates that the constructs converge to explain the variance in their indicators.

The final step of evaluation of our model is discriminant validity. Table 4 shows the HTMT ratio findings. It reveals that all the latent variables are below the critical threshold of .85.

This means that the criterion of discriminant validity is met in the present structural model. Therefore, the observable constructs in the structural model are indeed distinct although they correlate.

Research Question 1

The first research question is concerned with the degree to which the different vocabulary variables separately contribute to writing performance. For this reason, path coefficients with p-values were computed, using the bootstrapping procedure with 5000 samples. Table 5 presents the individual contributions of the independent variables on the dependent variable, which is writing ability. As Table 5 displays, the results revealed that receptive vocabulary breadth contributed the most to writing ability ($\beta = 0.533$, $p < .000$) and was statistically significant. Conversely, productive breadth explained around 19% of the variance in writing ability ($\beta = 0.191$, $p > .05$), but it was not statistically significant. In much the same way, lexical depth contributed very little to writing ability ($\beta = 0.020$, $p < .05$) and was not statistically significant. For a visual inspection of the model with path coefficients and R2 squared estimates, Figure 5 summarizes the paths and their collective contributions to writing ability.

Research Question 2

The second research question has to do with the extent to which receptive breadth, productive breadth, and depth of vocabulary knowledge jointly contribute to writing ability. This question was raised to explore whether vocabulary knowledge dimensions can explain performance in writing scores, or not. To answer this research question, the PLS SEM model produces R Square and R Square Adjusted values. These values are interpreted with reference to Plonsky and Ghanbar's (2018) education specific benchmarks of effect sizes. These benchmarks indicate that R Square values ranging from 0 to .20, .21 to .50, and above .51 should be interpreted as weak, moderate, and strong, respectively. Table 6 depicts the R Square findings of this study. As the table reveals, the concurrent contribution of the receptive and productive lexical breadths and the receptive depth in relation to narrative writing is .450. In other words, the structural model of this research has a moderate predictive power and can account for 45% of the variance in writing ability, which is highly promising. However, examining other variables such as vocabulary fluency and productive lexical depth is warranted to attain higher predictive power.

Table 5 Findings of the path coefficients.

Paths	Path coefficients (Beta)	T-statistics	p-value
Receptive size → WA	0.533	5.050	0.000
Productive size → WA	0.191	1.647	0.100
Lexical depth → WA	0.020	0.189	0.850

Table 6 Collective contribution of latent constructs to writing ability.

Construct	R Square	R Square Adjusted
Writing ability	*0.450*	*0.427*

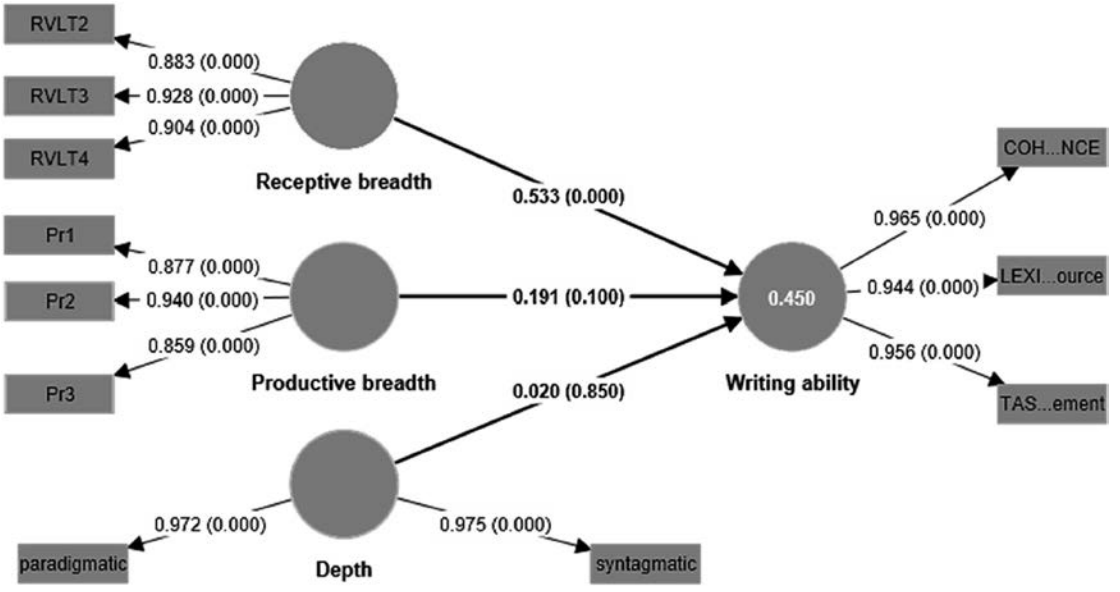

Figure 5 *Results of structural model with path coefficients.*

Discussion

This study examined the effect of passive vocabulary size, expressive vocabulary size, and vocabulary depth on EFL narrative writing ability. It examined the separate and joint contributions of the two aspects of vocabulary size as well as vocabulary depth to writing proficiency.

Using PLS SEM, the first research question aimed to explore the individual contributions (i.e., paths) of the independent variables to narrative writing ability, which is the dependent variable. The findings disclosed that receptive vocabulary size alone accounted for 54% of the variance in writing scores, while productive breadth and receptive depth were not significant. This simply indicates that learners with larger receptive vocabulary breadth are likely to perform better in narrative writing. An explanation for this might be that possessing a big receptive breadth helps students understand writing tasks and deal with complex processing such as generating ideas, organizing ideas, and coherence. Simply put, it might be that receptive vocabulary size explains the variance in writing because it reflects learners' overall language proficiency and facilitates organizing complex ideas. These explanations are corroborated by previous studies showing that receptive vocabulary size is important in cognitively burdensome tasks such as summary writing (Allagui & Al Naqbi, 2024) and reading-to-write ability (Pan, 2023). What is more, even in independent writing, receptive vocabulary was shown to be strongly associated with writing quality (Dabbagh & Enayat, 2019; Karafkan et al., 2022; Miralpeix & Muñoz, 2018). In other words, the results of this study are congruent with the existing literature, and they show that compared to productive vocabulary breadth or depth, receptive lexical size explained more variance in writing performance across different writing styles, including the narrative text type. Therefore, our study provided evidence for the prominence of the receptive aspect of the size of one's lexicon in narrative writing ability. It follows that this result corroborates Meara's (1996a) argument that learners with big vocabulary sizes are proficient users of a language.

Surprisingly, the results of this study denoted that productive vocabulary breadth was not statistically significant in relation to narrative writing. It would typically be anticipated that

productive vocabulary breadth should have contributed the most to writing proficiency because of the strong link between productive knowledge of lexis and writing. However, our study showed that productive vocabulary breadth did not explain much of the variance in writing scores. This finding contradicts Wu et al. (2019), who revealed that productive vocabulary size was more important than receptive vocabulary size and vocabulary depth in explaining the variance in writing scores. Yet, it should be borne in mind that Wu et al. (2019) recruited middle school students and employed vocabulary size tests extracted from their participants' respective textbooks. This might have confounded their design because students who memorize words from their lessons are more prone to score high in the productive test and this might result in a strong association with writing quality. In the case of our study, one of the reasons why productive vocabulary size did not significantly explain the variance in writing might have been due to the choice of the PVLT test. The PVLT does not assess students' mastery of the first 1000 most frequent word families, instead it measures productive knowledge starting from the 2000-word level. This might have underestimated our students' scores in the PVLT, resulting in weak relationship between their writing scores and productive size scores. Hence, studies employing different productive vocabulary measures are needed.

Concerning the vocabulary depth scores, the findings of this paper go hand in hand with other studies. For example, Wu et al. (2019) found that vocabulary depth contributed very little to writing ability, which is in accord with our study. Similarly, Allagui and Al Naqbi (2024) and Dabbagh and Enayat (2019) found that vocabulary depth did not predict scores of writing quality. However, Sukying's (2023) findings contradicted the results of this paper. Sukying's findings showed that vocabulary depth was the only significant predictor of writing ability, whereas receptive and productive breadths were not statistically significant. An explanation for this might be related to the proficiency level of their informants. That is, Sukying's (2023) informants were advanced EFL learners with receptive vocabulary sizes ranging from 4000 to 7000-word families. Hence, it might be possible to conclude that proficiency level plays an important role in as far as vocabulary depth is concerned. To clarify, when learners are proficient and possess a large receptive vocabulary size, they can easily exploit their vocabulary depth in writing by using advanced collocations and words with nuanced meanings. This might impress assessors to assign higher marks to their written productions as contended by Nation (2001). Another explanation for the inconclusiveness of results in relation to vocabulary depth might have to do with the writing scale adopted. Several researchers reported using either Jacob's (1981) analytic scale or TOFEL's holistic writing scale in their studies. These scoring rubrics were reported to focus more on lexical range at the expense of other lexical features such as morphological awareness, idiomaticity, collocational accuracy, to name a few (Dabbagh & Enayat, 2019; Read, 2000; Sukying, 2023). Therefore, calls have been made to develop writing rubrics that strike a balance among the different vocabulary knowledge dimensions, particularly considering the theoretical role of lexis in writing proficiency.

The second research question investigated the concurrent contribution of receptive vocabulary breadth, productive vocabulary breadth, and lexical depth to narrative writing ability. The result of the hypothesized model showed that the joint contribution of lexis explained around 45% of the variance in writing. This indicated that mastery of paradigmatic relations and syntagmatic relations in addition to knowledge of the most frequent words could facilitate producing written scripts. This finding is congruent with several previous studies that have examined the joint contribution of different lexical dimensions and writing ability. Studies have repeatedly demonstrated that vocabulary knowledge has a foundational basis in writing (Karafkan et al., 2022; Pan, 2023; Sukying, 2023; Wu et al., 2019), showing that around 40% to 47% of the variance in writing could be predicted by vocabulary breadth and depth. Similar research has

even shown that the simultaneous contribution of breadth and depth of knowledge explained more than 50% of the variance in writing performance (Tong et al., 2023). These results provide further evidence endorsing the importance of vocabulary knowledge in explaining variability of scores across different genres of writing, including summary writing and reading-to-write ability. In consonance with the literature, our findings reinforce the theoretical role of lexical competence, especially receptive vocabulary size, in narrative writing ability.

However, our findings are partially in line with Dabbagh and Enayat (2019), who found that vocabulary breadth and depth explained only 25% of the variance in descriptive writing ability. This relatively weaker contribution of receptive vocabulary size and vocabulary depth might be explained by the choice of statistical test (regression) that was employed to analyze their data. Since the number of their participants was only 67, it might have been appropriate to employ other alternatives such as PLS SEM, which does not pose strict assumptions on normality of the data. Despite their relatively weak association among the variables, Dabbagh and Enayat's findings support the theoretical role of lexis in writing. On the other hand, Baba's (2009) findings run counter our findings in the sense that vocabulary breadth and depth did not account for EFL students' summary writing ability, while other variables such as text length and reading ability did. To explain, Baba's (2009) findings are not surprising since summary writing ability is different from independent writing tasks such as descriptive, narrative, and argumentative text types (Allagui & Al Naqbi, 2024). Thus, vocabulary knowledge might have played a minimal role because of the complexity of summarizing.

The findings of our study contribute to the existing literature and underscore the theoretical role that different vocabulary knowledge dimensions play in EFL writing ability. They showed that knowing a large number of words can be an indicator of writing quality. Thus, the receptive aspect of vocabulary breadth seems to be a good proxy of EFL writing ability. However, since vocabulary alone cannot predict all of the writing scores, other factors such as knowledge of audience, knowledge of topic, stored writing plans, and peer editing strategies might also be important in the process of writing and may explain the remaining variance. So, it follows that research investigating the combinatory effect of vocabulary dimensions on writing quality should control for other extraneous factors to offer a deeper understanding of the intricate nature of writing proficiency.

Conclusion

Using PLS SEM, this study contributes to the growing body of research on the role of vocabulary knowledge in EFL writing ability. The results supported the prominence of receptive vocabulary size over and above productive breadth and lexical depth in the assessment of EFL narrative writing. Conversely, productive size and vocabulary depth were not statistically significant and contributed little to very little to writing proficiency. Concurrently examining breadth and depth, this study adds to the existing body of research and provided evidence for the prominent role of receptive/productive vocabulary sizes and lexical depth in narrative writing ability and general writing ability by extrapolation. Thus, greater emphasis should be placed on vocabulary in EFL classes as it positively affects writing quality. On a side note, our findings also showed that vocabulary depth aspects should be given more attention in assessments of writing as claimed by Dabbagh and Enayat (2019).

Implications

The significant association and contribution of receptive breadth to narrative writing sheds light on the crucial function of lexis in writing. Just as vocabulary is important for writing, writing also contributes to vocabulary growth. When learners meaningfully employ newly

learned words in their writing, they end up entrenched in their memories (Laufer, 2023). This reciprocal relationship between vocabulary and writing further sheds light on their relevance in EFL classes. Therefore, it is important to promote vocabulary learning in classrooms because of its many benefits and association with overall language proficiency in general, and with writing quality in particular. For EFL teachers, several teaching strategies can be adopted to teach vocabulary effectively. For example, Nation (2024) encouraged teachers to employ several effective teaching strategies like deliberate teaching, word part strategy, mnemonic techniques, and word cards. These strategies are also endorsed by Bengochea and Sembiante (2024) in their best-evidence synthesis of the most effective teaching strategies of vocabulary. Research has shown that the deliberate teaching of the most frequent words (breadth and depth) can significantly enhance students' writing quality (Bengochea and Sembiante, 2024) . Hence, to promote successful writing, teachers are invited to direct students' attention to lexical features such as form, meaning, and use. This will help students entrench lexical items in their memory. Furthermore, teachers can opt for other strategies like spaced retrieval and repetitions to enhance vocabulary attainment, which also positively affects writing quality. Another way of enhancing students' lexical proficiency is by employing multimedia interventions in teaching vocabulary. Research has shown that using television-supported materials and computers in classes affected learners' receptive and productive vocabulary, especially if accompanied by subtitles (Bengochea & Sembiante, 2024; Teng & Mizumoto, 2023). Finally, instructors are encouraged to train their students to use DDL tools like concordancers. Such training fosters students' agency and helps them to discover more about collocational accuracy, which helps improve their writing.

For researchers, the findings of this study showed that lexical depth contributed very little to writing ability. One of the reasons to explain this could be the use of writing scales that overlook lexical depth (Dabbagh & Enayat, 2019; Sukying, 2023). Hence, it would be worthwhile to raise raters' awareness to consider aspects of lexical depth such as word associations and collocational accuracy in their assessments. The same remark goes for scale designers. It would be very helpful to develop a scale that includes different aspects of lexis in addition to range and sophistication.

Limitations and Future Studies

Like all other studies, this one is not without limitations. First, although the PLS SEM approach is efficient with relatively small populations, it is always beneficial to aim for heterogenous groups and recruit a large sample of participants. Second, the present paper focused on one type of writing, which is the narrative genre. While it is worthwhile to investigate, it does not provide a comprehensive profile of overall writing ability in other genres, like argumentative, descriptive, and expository task, to name a few. Thus, future researchers are invited to explore how lexical competence impacts performance in all writing genres. Third, this study employed the WAT to measure the informants' vocabulary depth, but the WAT only measures knowledge of lexical relations and collocational knowledge. It would be more informative to explore other depth aspects such as morphological awareness, word part knowledge, and productive depth. Acknowledging these limitations could help future endeavors to advance and tackle this issue from different angles.

References

Agrram, A., Mokhtari, N., & Laaboudi, D. (2024). Examining the concurrent contribution of receptive and productive vocabulary breadth aspects to Moroccan EFL students' speaking ability. *Arab World English Journal*, *15*(2), 226–245. https://doi.org/10.24093/awej/vol15no2.14

Allagui, B., & Al Naqbi, S. (2024). The contribution of vocabulary knowledge to summary writing quality: Vocabulary size and lexical richness. *TESL-EJ, 28*(1), 1–27. https://doi.org/10.55593/ej.28109a5

Anderson, R.C. & Freebody, P. (1981). Vocabulary knowledge. In J.T. Guthrie (Eds.), *Comprehension and teaching: Research reviews* (pp. 77–117). International Reading Association.

Atai, M. R., & Dabbagh, A. (2010). Exploring the role of vocabulary depth and semantic set in EFL learners' vocabulary use in writing. *Teaching English Language*, *4*(2), 27–49. https://doi.org/10.22132/tel.2010.66106

Baba, K. (2009). Aspects of lexical proficiency in writing summaries in a foreign language. *Journal of Second Language Writing*, *18*(3), 191–208. https://doi.org/https://doi.org/10.1016/j.jslw.2009.05.003

Batty, O. (2007). Vocabulary depth in written and oral assessment. In K. Brandford-Watts (Eds.), *JALT 2006 Conference Proceedings*. JALT, 1100–1108.

Bengochea, A., & Sembiante, S. F. (2024). Effective vocabulary interventions for young emergent bilinguals: A best-evidence synthesis. *Review of Education, 12*(1), e3458. https://doi.org/10.1002/rev3.3458

Boudribila, W. (2019). An analysis of the receptive vocabulary size and writing ability. *International Journal of Research Engineering, IT and Social Sciences, 9*(10), 33–38.

Butt, D., Fahey, R., Feez, S., & Spinks, S. (2012). *Using functional grammar: An explorer's guide*. Palgrave Macmillan.

Dabbagh, A., & Janebi Enayat, M. (2019). The role of vocabulary breadth and depth in predicting second language descriptive writing performance. *The Language Learning Journal*, *47*(5), 575–590. https://doi.org/10.1080/09571736.2017.1335765

Daller, H., Milton, J., & Treffers-Daller, J. (Eds.). (2007). *Modelling and assessing vocabulary knowledge*. Cambridge: Cambridge University Press.

Grabe, W., & Kaplan, R.B. (1996). *Theory and practice of writing: An applied linguistic perspective*. Routledge. https://doi.org/10.4324/9781315835853

Haastrup, K., & Henriksen, B. (2000). Vocabulary acquisition: acquiring depth of knowledge through network building. *International Journal of Applied Linguistics*, *10*(2), 221–240. https://doi.org/10.1111/j.1473-4192.2000.tb00149.x

Hair, J. F., Howard, M. C., & Nitzl, C. (2020). Assessing measurement model quality in PLS-SEM using confirmatory composite analysis. *Journal of Business Research*, *109*, 101–110. https://doi.org/10.1016/j.jbusres.2019.11.069

Hair, J. F., Hult, G. T. M., Ringle, C. M., Sarstedt, M., Danks, N. P., & Ray, S. (2021). *Partial Least Squares Structural Equation Modeling (PLS-SEM) using R: A workbook*. Springer International Publishing. https://doi.org/10.1007/978-3-030-80519-7_1

Hair, J. F., Risher, J. J., Sarstedt, M., & Ringle, C. M. (2019). When to use and how to report the results of PLS-SEM. *European Business Review*, *31*(1), 2–24. https://doi.org/10.1108/EBR-11-2018-0203

Hair, J. F., Sarstedt, M., Ringle, C. M., & Gudergan, S. P. (2018). *Advanced issues in Partial Least Squares Structural Equation Modeling (PLS-SEM)*. Sage. https://doi.org/10.3926/oss.37

Hair, J., & Alamer, A. (2022). Partial Least Squares Structural Equation Modeling (PLS-SEM) in Second Language and education research: Guidelines using an applied example. *Research Methods in Applied Linguistics*, *1*(3), 100027. https://doi.org/https://doi.org/10.1016/j.rmal.2022.100027

Han, D., & Qian, D. D. (2024). Evaluating the roles of breadth and depth of aural vocabulary knowledge in listening comprehension of EFL learners: An investigation applying auditory measures. *System*, *120*, 103207. https://doi.org/10.1016/j.system.2023.103207

Jacobs, H. J. (1981). *Testing ESL composition: A practical approach*. Newbury House.

Janebi Enayat, M., & Derakhshan, A. (2021). Vocabulary size and depth as predictors of second language speaking ability. *System, 99*, 102521. https://doi.org/10.1016/J.SYSTEM.2021.102521

Karafkan, M. A., Ansarin, A. A., & Hadidi, Y. (2022). Depth and breadth of vocabulary knowledge as predictors of narrative, descriptive and argumentative writing. *Journal of Modern Research in English Language Studies, 9*(2), 27–50. https://doi.org/10.30479/jmrels.2020.14268.1757

Laufer, B. (1998). The development of passive and active vocabulary in a second language: Same or different? *Applied Linguistics*, *19*(2), 255–271. https://doi.org/10.1093/applin/19.2.255

Laufer, B. (2023). Vocabulary and writing. In C. A. Chapelle (Eds.), *Encyclopedia of applied linguistics* (2nd ed.). Wiley.

Laufer, B., & Nation, I. S. P. (1999). A vocabulary-size test of controlled productive ability. *Language Testing*, *16*(1), 33–51. https://doi.org/10.1177/026553229901600103

Meara, P. (1996a). The dimensions of lexical competence. In G. Brown, K. Malmkjær, & J. Williams (Eds.), *Performance and competence in second language acquisition* (pp. 35–53). Cambridge University Press.

Miralpeix, I., & Muñoz, C.P. (2018). Receptive vocabulary size and its relationship to EFL language skills. *International Review of Applied Linguistics in Language Teaching, 56*(1), 1–24. https://doi.org/10.1515/iral-2017-0016

Nation, I. S. P. (1983). *Testing and teaching vocabulary*. Guidelines, 5, 12–25.

Nation, I. S. P. (2001). *Learning vocabulary in another language*. Cambridge University Press. https://doi.org/10.1017/cbo9781139524759

Nation, I. S. P. (2006). How large a vocabulary is needed for reading and listening? *Canadian Modern Language Review, 63*(1), 59–82. https://doi.org/10.3138/cmlr.63.1.59

Nation, I. S. P. (2012). The BNC/COCA word family lists. Retrieved from http://www.victoria.ac.nz/lals/about/staff/paul-nation

Nation, I. S. P. (2024). Re-thinking the principles of (vocabulary) learning and their applications. *Languages, 9*(5), 160. https://doi.org/10.3390/languages9050160

Pan, R. (2023). The role of receptive/orthographic vocabulary, productive/orthographic vocabulary, productive/phonological vocabulary and depth of vocabulary in predicting reading-to-write performance. *Journal of Psycholinguistic Research*, *52*(6), 3039–3062. https://doi.org/10.1007/s10936-023-10027-8

Plonsky, L., & Ghanbar, H. (2018). Multiple regression in L2 research: A methodological synthesis and guide to interpreting R2 values. *The Modern Language Journal*, *102*(4), 713–731. https://doi.org/https://doi.org/10.1111/modl.12509

Qian, D. D. (2002). Investigating the relationship between vocabulary knowledge and academic reading performance: An assessment perspective. *Language Learning*, *52*(3), 513–536. https://doi.org/10.1111/1467-9922.00193

Read, J. (1998). Validating a test to measure depth of vocabulary knowledge. In A. J. Kunnan (Eds.), *Validation in language assessment* (pp. 41–60). Lawrence Erlbaum Associates.

Read, J. (2000). *Assessing vocabulary*. Cambridge University Press.

Read, J. (2004). Plumbing the depths: How should the construct of vocabulary knowledge be defined? In P. Bogaards, & B. Laufer (Eds.), *Vocabulary in a second language* (pp. 209–227). John Benjamin. http://dx.doi.org/10.1075/lllt.10.15rea

Read, J. (2007). Second language vocabulary assessment: Current practices and new directions. *International Journal of English Studies, 7*(2), 105–125.

Schmitt, N. (2014). Size and depth of vocabulary knowledge: What the research shows. *Language Learning*, *64*(4), 913–951. https://doi.org/10.1111/lang.12077

Sparks, R. L., & Alamer, A. (2022). Long-term impacts of L1 language skills on L2 anxiety: The mediating role of language aptitude and L2 achievement. *Language Teaching Research*. https://doi.org/10.1177/13621688221104392

Stæhr, L. S. (2008). Vocabulary size and the skills of listening, reading and writing. *The Language Learning Journal, 36*(2), 139–152. https://doi.org/10.1080/09571730802389975

Stæhr, L. S. (2009). Vocabulary knowledge and advanced listening comprehension in English as a foreign language. *Studies in Second Language Acquisition*, *31*(04), 577–607. https://doi.org/10.1017/s0272263109990039

Sukying, A. (2023). The role of vocabulary size and depth in predicting postgraduate students' second language writing performance. *LEARN Journal*, *16*(1), 575–603. Retrieved from https://so04.tci-thaijo.org/index.php/LEARN/article/view/263457

Taşçı, S., & Turan, Ü. D. (2020). The contribution of lexical breadth, lexical depth, and syntactic knowledge to L2 reading comprehension across different L2 reading proficiency groups. *English Teaching & Learning*, *45*(2), 145–165. https://doi.org/10.1007/s42321-020-00065-z

Teng, M. F., & Mizumoto, A. (2023). The role of spoken vocabulary knowledge in language minority students' incidental vocabulary learning from captioned television. *Australian Review of Applied Linguistics*, *46*(2), 253–278. https://doi.org/10.1075/aral.22033.ten

Teng, M. F. (2014a). Assessing the depth and breadth of vocabulary knowledge with listening comprehension. *PASAA: A Journal of Language Teaching and Learning, 48*(2), 29–56.

Therova, D. (2023). Core academic vocabulary in four genres of novice student writing. *TESL-EJ, 27*(1), 1–27. https://doi.org/10.55593/ej.27105a8

Tong, Y., Hasim, Z., & Halim, H. A. (2023). The role of L2 vocabulary knowledge in writing proficiency from the perspective of mediating effect of fluency. *Arab World English Journal*, *14*(3), 210–230. https://doi.org/10.24093/awej/vol14no3.14

Varnaseri, M., & Farvardin, M. (2016). The relationship between depth and breadth of vocabulary knowledge and writing performance of Iranian MA students of TEFL. *Modern Journal of Language Teaching Methods, 6(*2), 544–554.

Webb, S., Sasao, Y., & Ballance, O. J. (2017). The updated Vocabulary Levels Test. *ITL – International Journal of Applied Linguistics*, *168*(1), 33–69. https://doi.org/10.1075/itl.168.1.02web

Weigle, S. C. (2002). *Assessing writing*. Cambridge University Press. https://doi.org/10.1017/cbo9780511732997

Westby, C. (2023). Assessing vocabulary breadth and depth. *Word of Mouth*, *35*(3), 7–9. https://doi.org/10.1177/10483950231211841b

Wilkins, D. A. (1972). *Linguistics in Language Teaching*. MFT Press.

Willaby, H. W., Costa, D. S. J., Burns, B. D., MacCann, C., & Roberts, R. D. (2015). Testing complex models with small sample sizes: A historical overview and empirical demonstration of what Partial Least Squares (PLS) can offer differential psychology. *Personality and Individual Differences*, *84*, 73–78. https://doi.org/https://doi.org/10.1016/j.paid.2014.09.008

Wu, S., Quentin Dixon, L., Sun, H., & Zhang, P. (2019). Breadth or depth: The role of vocabulary in Chinese English-Language beginning writers' development. *International Journal of Bilingual Education and Bilingualism, 24*(9), 1356–1372. https://doi.org/10.1080/13670050.2019.1572066

Appendix 1

ENSA École Nationale des Sciences Appliquées BERRECHID

Royaume Du Maroc
Ministère de l'Enseignement Supérieur, de la Recherche Scientifique et de l'Innovation
Université Hassan Premier
École Nationale des Sciences Appliquées
Berrechid

API 1 S2 Pr. [redacted]

C- Writing

Write about a person who has had a significant influence on your life and the lessons you learned from their example.

Make sure you write three paragraphs of at least 300 words

.....

.....

Appendix 2

IELTS Writing Task 2 Band Descriptors

Updated May 2023

Please visit IELTS.org for updates

Page 1

Scoring criteria for Academic and General Training tests

A script must fully fit the positive features of the descriptor at a particular level. **Bolded text** indicates negative features that will limit a rating.

Band Score	Task Response	Coherence & Cohesion	Lexical Resource	Grammatical Range & Accuracy
4	The prompt is tackled in a minimal way, or the answer is tangential, possibly due to some misunderstanding of the prompt. **The format may be inappropriate.** A position is discernible, but the reader has to read carefully to find it. Main ideas are difficult to identify and such ideas that are identifiable may lack relevance, clarity and/or support. Large parts of the response may be repetitive.	Information and ideas are evident but not arranged coherently and there is no clear progression within the response. Relationships between ideas can be unclear and/or inadequately marked. There is some use of basic cohesive devices, which may be inaccurate or repetitive. There is inaccurate use or a lack of substitution or referencing. There may be no paragraphing and/or no clear main topic within paragraphs.	The resource is limited and inadequate for or unrelated to the task. Vocabulary is basic and may be used repetitively. There may be inappropriate use of lexical chunks (e.g. memorised phrases, formulaic language and/or language from the input material). Inappropriate word choice and/or errors in word formation and/or in spelling may impede meaning.	A very limited range of structures is used. **Subordinate clauses are rare and simple sentences predominate.** Some structures are produced accurately but grammatical errors are frequent and may impede meaning. Punctuation is often faulty or inadequate.
3	No part of the prompt is adequately addressed, or the prompt has been misunderstood. No relevant position can be identified, and/or there is little direct response to the question/s. There are few ideas, and these may be irrelevant or insufficiently developed.	There is no apparent logical organisation. Ideas are discernible but difficult to relate to each other. There is minimal use of sequencers or cohesive devices. Those used do not necessarily indicate a logical relationship between ideas. There is difficulty in identifying referencing. Any attempts at paragraphing are unhelpful.	The resource is inadequate (which may be due to the response being significantly underlength). Possible over-dependence on input material or memorised language. Control of word choice and/or spelling is very limited, and errors predominate. These errors may severely impede meaning.	Sentence forms are attempted, but errors in grammar and punctuation predominate (except in memorised phrases or those taken from the input material). This prevents most meaning from coming through. **Length may be insufficient to provide evidence of control of sentence forms.**
2	The content is barely related to the prompt. No position can be identified. There may be glimpses of one or two ideas without development.	There is little relevant message, or the **entire response may be off-topic.** There is little evidence of control of organisational features.	The resource is extremely limited with few recognisable strings, apart from memorised phrases. There is no apparent control of word formation and/or spelling.	There is little or no evidence of sentence forms (except in memorised phrases).
1	**Responses of 20 words or fewer are rated at Band 1.** **The content is wholly unrelated to the prompt.** Any copied rubric must be discounted.	**Responses of 20 words or fewer are rated at Band 1.** The writing fails to communicate any message and appears to be by a virtual non-writer.	**Responses of 20 words or fewer are rated at Band 1.** No resource is apparent, except for a few isolated words.	**Responses of 20 words or fewer are rated at Band 1.** No rateable language is evident.
0	Should only be used where a candidate did not attend or attempt the question in any way, used a language other than English throughout, or **where there is proof that a candidate's answer has been totally memorised.**			