



Predictability of Vocabulary Size on Learners' EFL Proficiency: Taking VST, CET4 and CET6 as Instruments

GUI Ling^{[a],*}

^[a]Shanghai Industry and Commerce Foreign Language College, Shanghai, China.

* Corresponding author.

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Abstract

Vocabulary plays a crucial role in L2 acquisition. This research examined whether Vocabulary Size Test designed by Nation & Beglar (2007) could predict learners' EFL proficiency. 96 Chinese sophomores of non-English majors participated in three tests which included College English Test Band-4 (CET4), College English Test Band-6 (CET6) and Vocabulary Size Test (VST). Result indicated that participants' vocabulary size was significantly correlated to their scores for CET4, but not to those for CET6. Five explanations were proposed for the results and implications for EFL teaching were also discussed.

Key words: Vocabulary size test; EFL proficiency; Predictability; College English tests

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INTRODUCTION

Vocabulary knowledge can be interpreted from various aspects. Nation (1990) believed that vocabulary knowledge could be both receptive and productive. The former refers to the vocabulary that can be understood and the latter refers to the one that can be used. According to Qian (1999), vocabulary knowledge consisted of breadth and depth of vocabulary. The former refers to the number of

vocabulary that learners can understand or vocabulary size, and the latter reflects the quality of vocabulary knowledge or how well the learners are aware of the vocabulary. The breadth of vocabulary seems to be more crucial than the depth of vocabulary, since it is an important index that evaluates learners' progress in language learning as well as their development of vocabulary competence (Lu, 2008). Vocabulary size in this research refers to the receptive vocabulary knowledge in terms of breadth.

In China, it is quite popular that EFL learners lay emphasis on vocabulary knowledge, in particular the receptive vocabulary knowledge in terms of breadth or vocabulary size. Take Hubei Engineering University for example, it was found that the students who participated in College English Test Band-4 (CET4) and College English Test Band-6 (CET6) had done a great deal in increasing their vocabulary size and that reciting and memorizing words and expressions was the focus of their preparation for the tests. It seemed to the students of non-English majors that vocabulary size would decide their performance in the CET4 and CET6. Nevertheless, none of the scholars has made any researches on whether Chinese learners' vocabulary size is able to predict their performance in CET4 and CET6 (*Note: CET4 and CET6 are national EFL proficiency tests for Chinese undergraduates and are held twice a year*).

1. LITERATURE REVIEW

Vocabulary plays an important role in language learning. In the researches regarding L2 acquisition, however, it was until the 1980s that tests for vocabulary knowledge began to be appropriately valued. In 1983 Nation designed Vocabulary Levels Test (VLT) which aimed to diagnose students' receptive knowledge of vocabulary. In 1990, with the publication of Nation's *Teaching and Learning Vocabulary*, VLT in the book began to be widely used all over the world.

Nevertheless, it seemed to Nation & Beglar that VLT could merely vaguely indicate participants' level of vocabulary size. Based on the revision of VLT, Nation and Beglar cooperated and designed Vocabulary Size Test (VST) in 2007 and Beglar (2010) confirmed the validity of VST later. Beglar believed that VST provided a new instrument for teachers and researchers to measure L2 learners' written receptive vocabulary size, which proved to be reliable, accurate, comprehensive and a proficiency test that was able to precisely evaluate learners' vocabulary size. Compared with other test instruments of vocabulary size, VST greatly widened the range of written receptive vocabulary size. There is no doubt that as measurement tool of vocabulary size, VST turns out to be newer and more perfect than others such as VLT.

VST regards word family as measurement criteria for vocabulary size. A word family is composed of a basic word, a derivative and an inflected form which do not need to be learnt one by one. The measurement of vocabulary size with the help of word family accords with the composition of psychological vocabulary and helps to standardize the researches on vocabulary size (Bauer & Nation, 1993). VST consists of the most frequently used 14000 English word families, among which 1000 can be regarded as a level, and each level includes 10 test items, 140 test items in total. Of each test item each word that is tested is 'put' in the concise indefinite context. VST adopts the test technique of multiple-choice which has four advantages. Firstly, multiple-choice applies to learners from different language backgrounds; secondly, it may control the difficulty level of keys; thirdly, it makes it possible for the test to be as efficient and reliable as possible; fourthly, it may indicate whether participants know each of the words that are tested (Nation & Beglar, 2007). An example for the test is listed as the following:

MINIATURE: It is a miniature.

- a. a very small thing of its kind
- b. an instrument to look at small objects
- c. a very small living creature
- d. a small line to join letters in handwriting

In China scholars used to make a great number of researches on L2 vocabulary learning, but few ones with regard to the correlations between vocabulary and language proficiency. And VLT, instead of VST recently designed by Nation & Beglar, has been the most frequently used instrument for the measurement of vocabulary size. Although Li (2007) made some researches on the effect of vocabulary size on learners' comprehensive language ability, he also used VLT, not VST, as instrument to measure learners' vocabulary size. In addition, Li used the previous year's College English Test Band-3 (CET3) for the measurement of comprehensive language ability. Li deemed that most probably his participants had had not contact with the test, which was not confirmed at any rate. In view of this, this research intended to take non-English majors as subjects and use VST, CET4 and CET6

as instruments to examine the predictability of vocabulary size on Chinese students' English proficiency. In China, the most authoritative standardized foreign language tests should be CET4 and CET6, which can precisely evaluate candidates' English proficiency, consisting of listening, reading, writing and translation and cloze (four parts in total) with the full marks of 710, 249 for listening, 249 for reading, 142 for writing and translation and 70 for cloze. The total scores candidates obtained in the tests might reveal their comprehensive English proficiency. The reliability coefficients for CET4 and CET6 were respectively 0.91 and 0.90.

2. METHOD

2.1 Questions

This research intended to answer the following three questions:

Question a. What is the relationship between participants' vocabulary size and their total scores obtained in CET4 and CET6?

Question b. How is participants' vocabulary size correlated to their performance in listening, reading, writing and translation and cloze in CET4 and CET6 respectively?

Question c. Can participants' vocabulary size predict their overall English proficiency?

2.2 Participants

96 sophomores of non-English majors from Hubei Engineering University, China participated in the tests, with 40 males and 56 females and the average age of 20.4.

2.3 Instruments

This study used two instruments for data collection. One was Vocabulary Size Test (VST) designed by Nation & Beglar (2007) which aimed to measure participants' vocabulary size. To ensure the validity of the test, 1-8 level items were chosen from VST (80 points), since pretest (when all the levels were chosen) indicated that participants aimlessly guessed the meaning of the words above 8000 word families and got very low scores and the vocabulary size required by CET6 was no more than 5500 words (counted in entries). Other instruments were CET4 and CET6 which were used for the measurement of participants' overall English proficiency.

2.4 Procedures

The participants took CET in the middle of December, 2013, which was their third semester of university life. 59 of the 96 took CET4 in the morning and 37 took CET6 in the afternoon since they had already passed CET4 in their second semester. Four days after the national tests, the 96 students took VST, which might ensure that participants took CET and VST almost simultaneously and would not significantly affect their performance because of the short intervals.

Data collection for vocabulary size was finished at the end of December and scores for CET4 and CET6 were obtained in March, 2014. All of the data were analyzed via SPSS 16.0.

3. RESULTS

The following six tables obviously revealed the results of this research.

Statistic description about the correlation between vocabulary size and total scores for CET4 & CET6 can be seen in Table 1, which indicated that participants' vocabulary size was intermediately correlated to their total scores for CET4 ($r=.371$, $\text{Sig}=.004<.05$), but not significantly correlated to those for CET6 ($r=.270$, $\text{Sig}=.105>.05$).

From Table 2 it can be seen that participants' vocabulary size was significantly correlated to their listening scores for CET4 ($r=.320$, $\text{Sig}=.013<.05$), but

not significantly correlated to those for CET6 ($r=.146$, $\text{Sig}=.390>.05$), see Table 2.

Table 3 revealed that participants' vocabulary size was significantly correlated to their reading scores for CET4 ($r=.364$, $\text{Sig}=.005<.05$), but not significantly correlated to those for CET6 ($r=.297$, $\text{Sig}=.074>.05$), see Table 3.

Table 4 indicated that participants' vocabulary size was neither correlated to their writing and translation scores for CET4 ($r=.151$, $\text{Sig}=.254>.05$), nor to those for CET6 ($r=.246$, $\text{Sig}=.142>.05$), see Table 4.

From Table 5 it can be seen that participants' vocabulary size was not significantly correlated to their cloze scores for both CET4 ($r=.152$, $\text{Sig}=.252>.05$), and CET6 ($r=.252$, $\text{Sig}=.133>.05$), see Table 5.

As for the differences between participants for CET4 and those for CET6 regarding vocabulary size, independent sample t test indicated that the differences were significant ($t=-4.369$, $\text{Sig}=.000<.05$), denoting that students for CET6 had a significantly larger vocabulary size than students who took CET4 (Table 6).

Table 1
Correlation Between VST and Total Scores for CET4 & CET6

Group	Test paper	Number	Lowest	Highest	Mean	S. D.	r	Sig. (2 Tailed)
CET4	VST	59	28	58	41.00	5.651	.371**	.004
	CET4	59	335	566	469.51	48.522		
CET6	VST	37	30	62	46.89	7.520	.270	.105
	CET6	37	312	605	451.22	70.071		

Note: Number=number of participants; S.D.=standard deviation

Table 2
Correlation Between VST and Listening Scores for CET4 & CET6

Group	Test paper	Number	Lowest	Highest	Mean	S. D.	R	Sig. (2 Tailed)
CET4	VST	59	28	58	41.00	5.651	.320*	.013
	CET4	59	102	194	161.17	22.503		
	Listening							
CET6	VST	37	30	62	46.89	7.520	.146	.390
	CET6 Listening	37	76	209	145.73	31.884		

Table 3
Correlation Between VST and Reading Scores for CET4 & CET6

Group	Testpaper	Number	Lowest	Highest	Mean	S.D.	R	Sig.(2Tailed)
CET4	VST	59	28	58	41.00	5.651	.364**	.005
	CET4	59	114	211	169.76	21.823		
	Reading							
CET6	VST	37	30	62	46.89	7.520	.297	.074
	CET6 Reading	37	114	221	181.16	26.071		

Table 4
Correlation Between VST and Writing & Translation Scores for CET4 & CET6

Group	Test paper	Number	Lowest	Highest	Mean	S.D.	R	Sig. (2 Tailed)
CET4	VST	59	28	58	41.00	5.651	.151	.254
	CET4	59	63	115	89.14	11.463		
	W & T							
CET6	VST	37	30	62	46.89	7.520	.246	.142
	CET6 W & T	37	57	121	86.84	14.639		

Note: W & T=writing and translation

Table 5
Correlation Between VST and Cloze Scores for CET4 & CET6

Group	Testpaper	Number	Lowest	Highest	Mean	S.D.	R	Sig.(2Tailed)
CET4	VST	59	28	58	41.00	5.651	.152	.252
	CET4	59	35	66	49.44	7.470		
	Cloze							
CET6	VST	37	30	62	46.89	7.520	.252	.133
	CET6	37	13	57	37.49	11.859		
	Cloze							

Table 6
Differences Between CET4 Group & CET6 Group in Vocabulary Size

Sample	Group	Number	Mean	S.D.	S.E.	t	Sig.
VST	CET4	59	41	5.651	0.736	-4.369	.000
	CET6	37	46.89	7.52	1.236		

Note: S.D. = standard deviation; S.E.=standard error

4. DISCUSSION

Based on the above results, there might be five explanations.

Firstly, participants' vocabulary size was intermediately correlated to their total scores for CET4 ($r=.371$, $\text{Sig}=.004<.05$), but not significantly correlated to those for CET6 ($r=.270$, $\text{Sig}=.105>.05$). Although CET6 group had a significantly larger vocabulary size than CET4 group, it did not mean that the vocabulary size could ensure the participants high scores for CET6. Hence it can be concluded that vocabulary size plays an important role in CET4, but it is insufficient for CET6 since the higher level a language proficiency test is, the more it requires for the depth and productive competence of vocabulary. In the interviews with the participants, it was found that most of them claimed that they had spent most of the time on reciting words and expressions in their EFL learning and preparations for CET4 and CET6 and that they recited more words and meanings than lexical chunks, but used less. They also admitted that as there were merely three periods per weeks for college English course, teachers seldom dwelt upon words and expressions and often failed to provide students with sufficient contexts to practice the lexical knowledge. Therefore most of the participants in this research recited the vocabulary list by means of rote learning, obtained vocabulary knowledge in terms of breadth and neglected their depth, received words and expressions from time to time but seldom produced them. From Table 1 and Table 6, it could be found that the coefficient for vocabulary size and overall EFL proficiency tended to descend.

Secondly, vocabulary size had predictive validity for participants' CET4 listening ability, but not for their CET6 listening competence. Listening comprehension is a rather complicated cognitive processing. Vocabulary size is the basis for listening comprehension and decides how much listeners can understand, while the depth of

vocabulary knowledge determines the accuracy and depth of listening comprehension (Staehr, 2009). The point was that many students who took CET6 did not have more vocabulary knowledge in terms of depth than those who took CET4. The reason might be that according to *College English Curriculum Requirements* issued by the Chinese Educational Ministry in 2007, the basic requirements (which is very much similar to those for CET4) demands merely 4795 words, and 3500 of them had already appeared in senior high school textbooks and been repeatedly practiced before the national entrance examination, while the new words required by CET6 were usually recited and prepared by students within a very short period of time (usually a semester) after they had had passed CET4. Many students who took CET6 even stayed late at night to memorize words and expressions, which made it impossible for them to be familiar enough with the words in terms of depth and might result in the fact that the students for CET6 did not have the same ability of automatically processing the meanings of words they temporarily obtained as the students for CET4 had. According to the deep processing theory (Craik & Lockhart, 1972), the deeper the learners process the words, the better the acquisition result will be, from which the following conclusion might be arrived at: only when the learners have repeated contact with the new words in different contexts for quite a long period of time and use them until they become fairly familiar with them are they able to automatically process the meanings of the words and reach a high level in listening comprehension.

Thirdly, vocabulary size could predict learners' reading ability for CET4, but not for CET6. There were possibly the following three reasons. First, compared with CET6, CET4 had shorter texts, lower requirement for reading techniques and mainly demanded breadth or size of vocabulary, hence participants who had a larger size of vocabulary might get high scores in CET4 reading. Second, as previously mentioned, students

who took CET6 memorized the new words by means of rote learning within a short time were proved to be insufficiently familiar with the words and read slowly during the test, while texts for CET6 were comparatively longer and had to be finished within the same period of time, which increased the difficulty level for students to give the answers within the given time. Third, CET6 required more vocabulary knowledge in terms of depth than CET4 and focused on participants' ability of guessing the meaning of words according to the context from the perspectives of word meaning, collocation and rhetoric devices. Accordingly limited by the length and purpose, this research did not examine participants' vocabulary knowledge in terms of depth, but results in Table 3 validated the importance of the two aspects of vocabulary knowledge, or both the vocabulary size and depth of vocabulary knowledge for EFL reading.

Fourthly, in both CET4 and CET6, vocabulary size and writing & translation were not significantly correlated to each other. In other words, vocabulary size had no predictive validity for participants' writing & translation. Writing & translation tested participants' productive vocabulary size as far as vocabulary knowledge is concerned. Nevertheless, students' receptive vocabulary size and their productive one are usually not balanced and the former in general is acquired before the latter, since the 'productive vocabulary' requires more time and effort than the 'receptive vocabulary' (Aitchison, 1994; Laufer, 1998). Hence for both teachers and students, the conversion of 'productive vocabulary' to 'receptive vocabulary' is a hard nut to crack that they have to deal with and an issue that they are supposed to attach importance to in EFL teaching and learning. Writing is a sort of creation and translation a recreation. Translation, as a recreation, has to be timely and accurate, which proves to be one of the criteria for translation in times of internet (Fu, 2013). Ellis' (1994) research revealed that the accumulation of lexical chunks (either for L1 or L2) was the basis for creative speech and that lexical chunks' formulaic frame with open slots or slot-and-frame patterns was of paramount importance for creative speech production. The acquisition of lexical chunks means the transition to the production of creative speech. Therefore in the process of vocabulary learning, learners should not only focus on memorizing the meanings of words, but also on the acquisition of lexical chunks, become aware of using them in new contexts, combining them and put new information in the frame patterns so as to produce flexible and various creative expressions. Otherwise it will be hard for learners to form the large amount of vocabulary in their brain into vivid sentences and texts.

Fifthly, vocabulary size could not predict learners' performance in cloze for CET4 and CET6. In the four item types for CET, cloze has been regarded as the most terrible one, which indicates the difficulty level of cloze in participants' eyes. Cloze does test students' overall

ability of using the language (In students' transcript, cloze is entitled as 'comprehensive'), and it is based on the theory that reading and all the linguistic behaviors have to involve prediction. When reading a passage, readers do not firstly interpret the meanings of single words and then combine them into a sentence so as to get the whole meaning. Instead readers guess the meanings at any time that may appear in the context so as to confirm the previous guessing according to the actual sentences that they have read, revise and supplement them (Read, 1986, p.89). Hence as far as vocabulary knowledge is concerned, cloze not only demands candidates' large amount of vocabulary size, but also good command of plentiful vocabulary knowledge in terms of depth. Obviously, a mere command of English words and their Chinese meanings are far from sufficient for EFL learners. Cloze demands learners' sufficient familiarity with the breadth and depth of vocabulary knowledge, a good command and profound understanding of them.

All in all, vocabulary size test had some predictive validity for CET4, but not for CET6, which proves to be a surprising result, indicating that for candidates of different levels, the increase of vocabulary size plays different roles in the improvement of their overall EFL proficiency. It is a significant effective means for learners of comparatively lower level (such as candidates for CET4) to improve their overall EFL proficiency via the increase of their vocabulary size. Nevertheless, if learners intend to make greater progress in their EFL learning, such as to pass CET6, it seems to be far from enough merely by increasing their vocabulary size, which might provide some implications for the current college English teaching in China. In the teaching of EFL vocabulary, too much emphasis had been laid on the breadth and reception of vocabulary knowledge while the depth and production of vocabulary knowledge were generally neglected.

CONCLUSION

The tests in this research once again confirmed Meara's (1998) view that vocabulary size had significantly positive correlation to learners' listening, reading and even overall language proficiency. In addition, when learners' language proficiency has reached a comparatively high level (such as CET6 or above in this research), the increase of vocabulary size does not always mean that their overall EFL proficiency will be obviously improved, in particular when learners simply memorize words by rote learning but lack the depth of vocabulary knowledge, and the accumulation of vocabulary size without production and use was not able to effectively improve learners' overall EFL proficiency. It should be noted that it is a totally wrong and ineffective means to stay late at night and memorize words and expressions so as to increase vocabulary knowledge, just as the Chinese learners did in this research.

There might be some implications as well as limitations for the result of this research for learners who simply strive for vocabulary size. First, due to the small sample, the conclusion of this research ought to be validated in tests with larger samples. Second, as previously discussed, VST merely evaluates learners' receptive vocabulary knowledge in terms of breadth while productive vocabulary knowledge regarding both breadth and depth does respectively affect learners' overall EFL proficiency, which can be the topics for future researches.

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