



การสร้างแบบทดสอบวัดความรู้ปริมาณคำศัพท์ภาษาอังกฤษ  
สำหรับนักเรียนชั้นมัธยมศึกษาปีที่ 4

A Construction of English Vocabulary Size Test for Mathayomsuksa 4 Students

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**บทคัดย่อ**

งานวิจัยนี้มีวัตถุประสงค์เพื่อ 1) สร้างแบบทดสอบวัดความรู้ปริมาณคำศัพท์ภาษาอังกฤษสำหรับนักเรียนชั้นมัธยมศึกษาปีที่ 4 และ 2) หาค่าความเที่ยงตรงและค่าความเชื่อมั่นของแบบทดสอบ ขั้นตอนการสร้างแบบทดสอบประกอบด้วย 1) ตั้งลักษณะเฉพาะของแบบทดสอบ 2) สร้างคำเป้าหมาย 3) เขียนแบบทดสอบ 4) หาค่าความเที่ยงตรง 5) หาค่าความเชื่อมั่น และ 6) ปรับปรุงแบบทดสอบสำหรับการนำไปใช้ ค่าความเที่ยงตรงได้มาจากค่าดัชนีความสอดคล้องของผู้เชี่ยวชาญสามคน ค่าความเชื่อมั่นของแบบทดสอบคำนวณโดยใช้สูตรคูเดอร์-ริชาร์ดสัน 20 (KR20) แบบทดสอบวัดความรู้ปริมาณคำศัพท์ภาษาอังกฤษสำหรับนักเรียนชั้นมัธยมศึกษาปีที่ 4 นี้ เป็นแบบทดสอบชนิด 5 ตัวเลือก มีจำนวนทั้งหมด 70 ข้อ ซึ่งมีความเที่ยงตรงเท่ากับ 0.96 และค่าความเชื่อมั่นเท่ากับ 0.71 แบบทดสอบนี้สามารถนำไปทดสอบด้านคำศัพท์ภาษาอังกฤษได้ทั้งในการเรียนการสอนและการวิจัย

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**Abstract**

This study aimed: 1) to construct an English vocabulary size test for Mathayomsuksa 4 students and 2) to establish the validity and reliability of the test. Six steps adopted in constructing the test were; 1) setting the test specifications, 2) establishing target words, 3) writing the first draft, 4) seeking for the test validity, 5) piloting for the test reliability and 6) adjusting the test for use. The validity was from the results of the Index of Item-Objective Congruence (IOC) of three experts. The reliability was calculated using Kuder-Richarson Formula 20 (KR20). The *Vocabulary Size Test for Grade 10 Thai Student (G10VST)* is a multiple choice format with five options. It consists of 70 items. The validity and reliability of G10VST was 0.96 and 0.71 respectively. The G10VST can be used in English vocabulary assessments in pedagogy and research.

**Keywords:** Grade 10 Thai Students, Vocabulary Size, Vocabulary Size Test

**1. Introduction**

Vocabulary is considered an essential component of learning English as previous evidences found that there are the high relationships between vocabulary knowledge and the four language skills – listening, speaking, reading and writing. Especially, for English as foreign and second language learners (EFL/ESL), their language abilities are heavily depended on their vocabulary knowledge or vocabulary size. If the vocabulary size is large, it indicates that a

learner is getting closer to language achievement. (Laufer, 1992; Milton & Alexiou, 2009; Staehr, 2008).

In Thailand, the Basic Education Core Curriculum B.E. 2551 (A.D. 2008) proposed by Ministry of Education (MOE) is expected for the number of words to be known at each level. At the end of Grades 3, 6, 9 and 12, students are expected to know approximately 300-450 words, 1,050-1,200 words, 2,100-2,250 words and 3,600-3,750 words respectively (MOE, 2008).

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At present, there is no evidence of the MOE's vocabulary expectations. Therefore, it is interesting to construct the vocabulary size test for Grade 10 students to measure the actual size of English vocabulary of the students as they have just finished the compulsory education, and are at the start of three years for high schools to complete the basic education.

To diagnose the amount of vocabulary knowledge that the students know and recognize at a particular level of their language proficiency, a vocabulary size measure is needed. Vocabulary Size Test (VST) is one of the well-known vocabulary size measures. Nation and Beglar (2007) designed a VST to provide a reliable, accurate and comprehensive measure of English vocabulary size of native speakers and non-native speakers. This VST was developed from Vocabulary Level Test (VLT) (Nation, 1983), which is a multiple matching format and has only five frequency levels (2,000, 3,000, 5,000, 10,000 and University Word List). The VST, on the other hand, is a four-multiple option. Each item in the test consists of two parts, a stem (a target word and an example of a non-defining sentence) and four options (one correct answer and three distractors). The test is broken into different 1,000 word frequency from high to low-frequency words of the British National Corpus (BNC) to measure knowledge of particular frequency levels of words.

A VST can be established to study purposes. To set up the test, Nation (2012) proposed five specifications.

#### 1. **Sampling the words for the items.**

As each item in the test represents different frequencies of word levels, the item needs to be randomized fairly. A good test should cover word levels, which are slightly beyond the test-takers' probable vocabulary size.

2. **Making the stem.** The stem of each item consists of a target word and followed by a simple non-defining sentence to indicate the part of speech, to limit the meaning and to slightly

hint the meaning by providing an example of how the target word is used.

3. **Writing the options.** Options must be written in easier language than the stem because the purpose of a VST is to measure vocabulary knowledge, not vocabulary in use. For example, only words from the first and the second 1,000 word families will be used for making the second 1000 level test.

4. **Ordering the items in the test.** The test items are typically ordered in frequency levels, but it is better to use the words for higher-frequency words in the options because the lower-frequency order might lead test-takers to give up during the higher test levels.

5. **Piloting.** The established test needs to check if it is ready for use or still need for more quality checking by piloting the test with the pilot group.

In Thailand, vocabulary knowledge has been studied as reviewed as follows.

In 2010, Wan-a-rom examined the two equivalences of VST, the 14,000 monolingual English version (Nation & Brglar, 2007) and the established bilingual English-Thai version, with 30 pilot students who were from Grades 10-12. Each test version consisted of 50 items, ranging from the first to the fifth 1,000 word levels. All of the four options in the English version were translated into Thai. There were 20 minutes for taking each test. The scores of the English version and the English-Thai version were 29 and 35.97 out of 50, indicating that the Thai version was easier than the English version.

In 2014, Srisawat adapted the Revised Vocabulary Level Translation Test (RVLTT) from the VLT (Nation, 1983). The RVLTT was administered with 371 Khon Kaen University students. The findings found that the students did not reach and meet the language assumption as mentioned that 2,000 to 3,000 word size is necessary for understanding a text of university level.

In 2016, Nirattisai and Palanuklwong developed the bilingual English-Thai version of the 14,000 monolingual English version of the VST (Nation & Beglar, 2007). The English-Thai version was comprised of five options, of which the four options in Nation and Beglar's VST (2007) translated into Thai and *I don't know* (ไม่ทราบคำตอบ) was added in the fifth to prevent the guessing although it could discourage the students' partial knowledge (Zhang, 2013). The bilingual English-Thai version was valid and reliable as it well measured students' vocabulary size.

In summary, a VST can be established based on study purposes and to gain the actual size of English vocabulary, *I don't know* can be added to one of the test options. Previous studies focused on only translation versions of Nation and Beglar' VST, which contains only 10 items for each word level. In Thailand, unfortunately, there is no availability of a test to measure the actual size of English vocabulary of Grade 10 students to the MOE's expectations. Therefore, an English vocabulary size test for the students is needed.

## 2. Objectives

1. To construct an English vocabulary size test for Grade 10 students.
2. To establish the validity and reliability of the test.

## 3. Research Questions

1. Which aspects are to be included in an English vocabulary size test for Grade 10 students?
2. Is G10VST valid and reliable?

## 4. Scope of the Study

The study focused on the constructing of an English vocabulary size test for Grade 10 Thai students to measure the students' actual size to the MOE's vocabulary expectation of Grade 10.

## 5. Conceptual Framework of the Study

The conceptual framework of this study is presented in Figure 1.

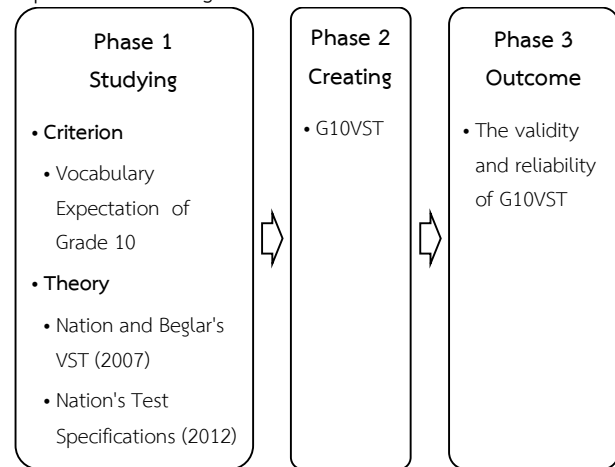


Figure 1 Conceptual framework of the present study

Figure 1 shows three phases of the present study's conceptual framework. The details of each phase are as follows.

**Phase 1:** Studying criterion and theory. Criterion used for this present study is the MOE's vocabulary expectation of Grade 10, which are 2,600-2,750 words (MOE, 2008). Nation and Beglar's VST (2007) and Nation's Test Specifications (2012) were used as models to write test specifications of G10VST and to be employed in constructing steps of the G10VST.

**Phase 2:** Creating. G10VST was designed and constructed. Six steps were involved as: (1) setting the test specifications, (2) establishing target words, (3) writing the first draft, (4) seeking for the test validity, (5) piloting for the test reliability and (6) adjusting the test for use.

**Phase 3:** Outcome. The G10VST was valid and reliable.

## 6. Methodology

This study involves six steps to construct the G10VST.

**Step 1:** Setting the test specifications. In order to set the specifications for G10VST, test specifications were studied (Alade & Omoruyi, 2014), including test type, time allocation and number of items.



**Step 2:** Establishing target words. As the maximum of vocabulary expectation of Grade 10 is 2,750 words (MOE, 2008), the 2,800 words of English Vocabulary List for Grade 10 Thai Students (G10VL), ranging from easy to difficult, was used as a vocabulary bank in establishing target words of G10VST (see for more details, Namchan and Danvivath, 2019).

The criteria for choosing the target words were: (1) the word must appear in G10VL, (2) it must be a content word, including nouns, verbs, adjectives and adverbs, and (3) it must be from a different root. If the root reappeared with different prefix or suffix, it was excluded.

**Step 3:** Writing the first draft. The test was written using the following principles (Nation, 2012; Nation & Beglar, 2007; Zhang, 2013):

(1) It was a multiple choice test with five options. The fifth option, *I don't know*, was added to prevent students' guessing.

(2) The stem of each item consisted of a target word and a simple non-defining sentence to indicate the part of speech and to limit the meaning of the target word.

(3) The four options were chosen from G10VL and rearranged using alphabetical order. The ranks of the words in the options were mostly lower than the target word.

(4) The test items were ordered similarly to the target word list. Therefore, the items were ranged from easy to difficult ones.

**Step 4:** Seeking for the test validity. Three experts, who were two experienced English teachers of Grade 10 and an English native speaker, validated the test using the IOC form.

**Step 5:** Piloting for the test reliability. The test was piloted with 40 students from two small-sized schools in two districts in Khon Kaen, and then KR20 was used to calculate for the test reliability.

**Step 6:** Adjusting the test for use. Using the results from the piloting, the test was adjusted (see the excerpt of G10VST in Appendix).

## 7. Results

### 7.1 Test Specifications

Test specifications of G10VST include the test purpose, test type, time allocation, number of items and test score as presented in Table 1.

**Table 1:** Test Specifications of G10VST

<b>Purpose</b>	To measure English vocabulary size of Grade 10 Thai students
<b>Test Type</b>	Multiple choice with five options
<b>Time Allocation</b>	45 minutes
<b>Number of Items</b>	70 items
<b>Score</b>	70 points (1 point per item)

**Table 1** shows the test specifications used as a guideline for constructing G10VST. The test was written in monolingual English like the original VST of Nation and Beglar (2007). There were five options constructed in the test with *I don't know* in the fifth option to prevent students' guessing (Zhang, 2013).

For time allocation, it was calculated from one class period (50 minutes), which included 5 minutes for orientation and test distribution and 45 minutes for test administration (see for more details, Nation, 2012, Nirattisai & Palanuklwong, 2016 and Wan-a-rom, 2010).

There were 70 items in the test, of which 70 target words were systematically randomized from the 2,800 words of G10VL. Using the criteria set for this present study (as previous mentioned in step 2 establishing target words), every 40th word was drawn from G10VL. Therefore, the first drawn word started from rank 21 (use), then rank 62 (shop) and others, respectively.

### 7.2 Test Validity and Reliability

G10VST was assessed for its validity and reliability. The test validity was 0.96 and the reliability was 0.71.



## 8. Discussion

In developing G10VST, test specifications and validity and reliability were sought.

### 8.1 Which aspects are to be included in an English vocabulary size test for Mathayomsuksa 4 students?

For the test specifications of G10VST, Nation and Beglar's VST (2007) and Nation's Test Specifications (2012) were set as models. The G10VST was a multiple-choice test written in monolingual English, similarly to the original version. When setting up the test specifications, Nation's five specifications (2012) were adapted: (1) the 2,800 words of G10VL were used as a vocabulary bank, (2) the 70 target words were drawn from every 40th words of G10VL, (3) the four options (the correct answer and three distracters) were chosen from the G10VL, (4) the 70 items were ordered followed the ranks of G10VL (easy to difficult words for Grade 10 level) and (5) the test was piloted with 40 students.

The five option format was used, which *I don't know* was added in the fifth option to prevent the guessing as Zhang (2013) and Nirattisai and Palanuklwong (2016) claimed that guessing could distort the real size, thus *I don't know* was suggested to be used even though Zhang (2013) pointed out that the different versions of the test (with or without *I don't know*), likely aligned with different purposes warranting more or less sensitivity to partial and subconscious knowledge, which is in accordance with Nation's (2012) notes that students completed the test more quickly when *I don't know* was added, indicating that they did not draw on their partial knowledge of vocabulary.

All vocabulary in G10VST is drawn from G10VL, which consists of vocabulary beyond Grade 10 students' vocabulary expectation (2,600-2,750 words). This is in line with Nation (2012) that the good test should cover word levels that are slightly beyond the test-takers' probable vocabulary size.

In order to convert the test score to English vocabulary size, the test score needs to be multiplied by 40 because there are 70 target words drawn from the 2,800 words of G10VL. If a student gets 20 out of 70 on G10VST, s/he has the vocabulary size of 800 words, which is 29.9 percent of the average size of Grade 10 vocabulary expectation (out of 2,675 words). Using this principle to calculate for students' vocabulary size, the average score of the pilot students was 20.75. When multiplied by 40, the amount of students' vocabulary in the piloting was 830 words (out of 2,800 words from G10VL). Regarding to the MOE's vocabulary expectation of Grade 10, the pilot students know only 31.03 percent of the words.

### 8.2 Is G10VST valid and reliable?

The validity and reliability of G10VST were 0.96 and 0.71. They were considered the highest validity and reliability, similarly to the original VST (Nation & Beglar, 2007) and the bilingual English-Thai version (Nirattisai & Palanuklwong, 2016).

To validate the G10VST, the IOC was applied. It was revealed that there were 9 items (items 7, 12, 14, 17, 35, 36, 42, 52 and 54) getting the IOC scores of 0.67 and the rest 61 items gained 1. The IOC score of the whole test was 0.96. Using the interpretation of the validity level based on Drost (2011), the G10VST was not needed to adjust because it was acceptable when the score was above 0.5.

Using KR20 to calculate for the test reliability, the G10VST's reliability was 0.71, which was acceptable value because it was above 0.7 (Drost, 2011), so that there was no needs to adjust. To summarize, the G10VST is valid and reliable for use.

## 9. Conclusion

There is no availability test to measure the actual size of English vocabulary of Thai students. This study, therefore, established the 70-item G10VST with five options, which is valid and reliable to be measured Grade 10 students' vocabulary size.



## 10. Implications and Suggestions

G10VST can be used as an instrument for teachers to assess the students' vocabulary size or to know which vocabulary each student needs.

As this G10VST was written in monolingual English, when conducting the test, an explanation in Thai was used to ensure the students' understanding. Thus, Thai instructions are suggested to add in the G10VST. Apart from adding Thai instructions in the test, the bilingual English-Thai version is recommended to be developed to learn more if the vocabulary size of the students is the same.

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