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Applying Lexical Profiling to Construct Technical Word Lists for Thai Tourist Guides

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Abstract

When learning high- and mid-frequency words, approximately 5,000 words might be inadequate for learners to survive in a career as a tourist guide. This paper aims to construct technical word lists for Thai tourist guides to serve as supplementary learning materials. Different word lists need different criteria for their construction. Three main methods are used to construct word lists: lexical profiling, eliminating off-list words, and expert verification. The self-compiled corpus comprising 653,196 tokens gathered from www.tourismthailand.org is used to construct six sub-word lists including the technical word list for Thai tourist guides containing 391 words and the technical word lists for northern, central, eastern, northeastern, and southern Thai tourist guides composing of 245, 264, 138, 187, and 176 words, respectively. The authors suggest using the word lists after mastering 2,000 high-frequency words, 570 academic words, and 378 tourism business words to prepare learners for their future career paths.

Keywords: vocabulary; Thai tourist guide; lexical profiling; low-frequency word; technical word list

Introduction

Lexical knowledge plays an important role in English learning settings. It is well-known as an essential skill for other skills, associated with knowledge acquisition and is central to communicative competence (Cameron, 2001; Harmon, Wood, & Keser, 2009; Laufer, 2005; Laufer & Nation, 1995; Lestari & Hardiyanti, 2020; Linse & Nunan, 2005; Nguyen & Nation, 2011; Schmitt, 2008). While deliberate vocabulary teaching and learning was viewed as plain, simple, and often neglected in the past (Folse, 2010; Meara, 1980; Schmitt, 2000), there has been more attention directed recently towards both the focus on vocabulary learning and teaching and research on vocabulary acquisition and development (Carter, 2012; McCarthy, O'Keefe, & Walsh, 2010; Nation, 1990, 2001, 2016; Read, 2000; Schmitt, 2000, 2010). In second language learning, vocabulary acquisition mostly takes place in formal classroom settings for the learning of word meaning and form, repeated encounters of words through textbooks, and repetition of vocabulary use. Even though learners recently have a greater chance of exposure to some situations advocated for learning vocabulary outside a classroom such as traveling abroad, English songs and movies, and surfing the internet (Doro, 2007), these contexts only seem to facilitate learning general vocabulary used in daily life. Therefore, technical words needed for their professional purposes should be highlighted. Tourism is important in many countries worldwide. People travel, often as tourists to visit other countries and experience something new, and are likely to use English as a medium of communication since it is widely used and understood worldwide. As a result, service providers with good English are required. In the tourism industry all over the world, including Thailand, English is often the common language used by tourist guides for their workplace or professional communication with business associates, tourists, and other visitors. English used for conducting tours in different countries involves different technical terms because a tourist guide is responsible for providing information related to geography, tradition, and culture, and this will differ depending on the country.

Constructing a word list for Thai tourist guides is definitely one of the ways to facilitate learners, especially those aspirants who

intend to work in the industry. The question is, "To prepare learners for being a Thai tourist guide, what words should be taught?" Schmitt (2000) recommended that second language learners should study low-frequency words after mastering 5,000 high- and mid-frequency words for their specific purposes. In defining the term 'low-frequency,' Nation (2001) stated that a high-frequency word in a field might become a low-frequency word in another field. That is to say, low-frequency words in general English might be high-frequency words in a specific field. According to Evans (2013), there are extensive textbooks, including those specially created for tourism business courses. However, the created textbooks infrequently reflect real-world needs, especially Thai tourist guides' needs. As a specialized word list for tourism businesses, the Tourism Business Word List (TBWL) was created and is comprised of 378 words (Laosrirattanachai & Ruangjaroon, 2021a). However, the TBWL might not be adequate to serve the specific need for lexical knowledge by Thai tourist guides. Hence, a technical word list for Thai tourist guides is needed.

In this paper, we propose the creation of technical word lists for Thai tourist guides, with lexical profiling as the main criterion. Lexical profiling is an efficient method used to extract specialized words that do not appear in the reference word lists including General Service Word List (West, 1953), Academic Word List (Coxhead, 2000), and Tourism Business Word List (Laosrirattanachai & Ruangjaroon, 2021a). To consolidate the word list, two more criteria are used, namely eliminating off-list words (words appearing outside the first-25,000 high-frequency words) and incorporating expert opinion. To create a word list, an appropriate corpus needs to be constructed carefully. To compile the corpus, language used to introduce tourist attractions in Thailand was collected from www.tourismthailand.org which is the official tourism website of Thailand. According to Hyland and Tse (2007), distinct word lists require distinct criteria for creation. Also, we believe that different characters of the corpus are appropriate for different criteria. Using the self-compiled corpus in this study as an example, each Thai tourist attraction introduced on the website is provided with a single page. This means that the technical terms used for each attraction appear only a very limited number of times. Therefore, considering the frequency or range might

not be an effective criterion. As a result, we attempt to create the technical word list for Thai tourist guides using appropriate measures. We suggest using the word list after mastering the first-2,000 high-frequency words (West, 1953), 570 academic words (Coxhead, 2000), and 378 tourism business words (Laosrirattanachai & Ruangjaroon, 2021a). We hope that the developed word list fulfils the learners' need for vocabulary as Thai tourist guides, to prepare them for their career paths.

Theoretical Background

Categories of Word List

A word list was proposed by Schmitt (1997) as one of the 58 taxonomies for Vocabulary Learning Strategies. In the past, construction of word lists was definitely a difficult task since it required enormous manpower. Later, the development of computer systems facilitated creating corpus and word lists in the 1970s (Nation, 2016). Then, computer systems replaced workers. Nation (2001) mentioned the following four categories of word list.

1) High-frequency word list – This category of word list contains English words appearing in a general context and being used in daily life at a high frequency. The most acknowledged high-frequency word list is the General Service List of English (GSL). The GSL, containing 2,000 high-frequency words, was developed by West in 1953. Now with almost 70 years having passed, the GSL has been criticized regarding various issues. For example, the state-of-the-art of words contained in the GSL might not be appropriate with the language used more recently (Hwang, 1989; Nation & Hwang, 1995; Richards, 1974). In addition, the excessive size of the GSL is another issue (Engels, 1968; Ward, 2009). Nevertheless, the GLS still has a large impact on vocabulary learning, teaching, and research.

2) Academic word list – This type of word list comprises words often used in academic fields. Some examples of academic word lists in the early stages were developed and proposed by Campion and Elley (1971), Praninskas (1972), Lynn (1973), and Ghadessy (1979). Later, Xue and Nation (1984) accumulated four previous word lists that they improved, revised, and presented as the University Word List. The critical development of academic word lists occurred in 2000

when Coxhead constructed a new academic word list using frequency, range, and lexical profiling criteria. The new Academic Word List containing 570 words, has been called the AWL since then. Apart from the AWL, other scholars putting effort into constructing an academic word list include Hyland and Tse (2007) and Gardner and Davies (2014).

3) Specialized word list – This is also called a technical word list and consists of words used in a specific field. The crucial attribute of technical words is that they are not mostly used in other fields but rather in a specific field. Some technical words might be understood by most people, while others might be known only by a group of people in a specific area (Nation, 2001, 2016). Among the four categories of word list mentioned in the current study, the technical word list has been more of a focus since these various technical word lists have been invented to benefit the learning and teaching of vocabulary in specific fields. Examples include science word lists (Coxhead & Hirsh, 2007; It-ngam & Phoocharoensil, 2019), a chemistry word list (Valipouri & Nassaji, 2013), medical word lists (Hsu, 2013; Lei & Liu, 2016; Wang, Liang, & Ge, 2008), a nursing word list (Yang, 2015), engineering word lists (Hsu, 2014; Todd, 2017; Ward, 2009), agricultural word lists (Martinez, Beck, & Panza, 2009; Muñoz, 2015), business word lists (Hsu, 2011; Konstantakis, 2007; Tangpijaikul, 2014), hospitality word lists (Laosrirattanachai & Ruangjaroon, 2020, 2021a), and applied linguistics word lists (Khani & Tazik, 2013; Vongpumivitch, Huang & Chang, 2009).

4) Low-frequency word list – The last category of word list is composed of words appearing in a text with very low frequency. These words might appear only one to two times in a text. Low-frequency words are often ignored by most teachers. However, Nation (2001) stated that low-frequency words could be technical words for other fields. Schmitt (2000) emphasized the importance of low-frequency words by advocating learning low-frequency words after mastering high- and mid-frequency words to stimulate a learner's interest.

Criteria of Word List Construction

Hyland and Tse (2007) suggested using different sets of criteria to create different word lists for various purposes. Nation (2016) noted

that each word list is constructed differently, depending on the creators who considered and used different criteria or factors such as purposes, targeted learners, and corpus qualities. The common criteria of word list construction are as follows.

1) Frequency – Generally, high-frequency words are appropriate to be included in a word list. However, Scott and Tribble (2006) illustrated such a word list as having "a big head" with high-frequency words and "a long tail" with mid- and low-frequency words. Further, a word list constructed emphasizing high-frequency would mostly contain function words and basic words used in daily life. Therefore, considering frequency alone to construct a specialized word list might not be suitable.

2) Range – Range refers to the number of files in which each word appears. The pioneer for considering range as one of the criteria for constructing a word list is Thorndike (1921). He claimed that considering frequency alone could lead to a biased word list. For example, the large size of a source might cause a word to appear with high frequency, despite it being in only a few other sources. Coxhead (2000) suggested considering range prior to frequency for a balanced word list.

3) Keyword analysis – This criterion refers to the identification of keywords appearing in a corpus by considering "keyness" (Gabrielatos & Machi, 2012). To analyze keywords, two or more corpora are needed. These corpora are used as sources for the analysis and can be either the same or different sizes (Rayon & Garside, 2000). Any words in a target corpus appearing with an unusually high frequency compared to the reference corpus/corpora are considered keywords.

4) Lexical profiling – In 1995, Laufer and Nation proposed the use of lexical profiling as a method of categorizing words into groups by using reference word lists. The principle of lexical profiling is that a word should appear solely in one profile (reference word list). At first, the three profiles originally used were the 1st 1,000 high-frequency words (West, 1953), the 2nd 1,000 high-frequency words (West, 1953), and the University Word List (Xue & Nation, 1984). Any words outside these three profiles would be later determined for containing in the list. Afterward, the University Word List was

replaced by the Academic Word List (Coxhead, 2000). Since then, lexical profiling has been one of the prototype criteria used to construct a word list (Cobb & Horst, 2001). Since a word appears solely in a profile, learners do not need to study a word more than once. Furthermore, this facilitates learners to study vocabulary step-by-step from the high-frequency words to academic words, and then complete their process by addressing technical words.

5) Expert verification – An expert verifying a word list is based on personnel with extensive experience of using English in a specific field. Knowledge and experience of technical term usage are crucial and beneficial to word list verification (Martinez, Beck & Panza, 2009). A questionnaire is used to obtain the word list verification data. Chung and Nation (2004) suggested using four-point rating scale to determine each word in the list.

According to the literature, there are various criteria for word list construction. In the present study, lexical profiling criterion is mainly used. The elimination of off-list words and expert verification are also used as a framework for the technical word list for Thai tourist guides, as explained in the research methodology section.

Research Methodology

Corpus Compilation

Language data related to tourist attraction information is required to construct a technical word list for Thai tourist guides. The data source chosen to compile a corpus should be reliable and unprejudiced. The experiences of tourist guides in using English to conduct a tour is a precious resource for word list verification, but collecting data from tours conducted with a group of tourist guides should be avoided since such a tour might show their styles of conducting the tour rather than their use of standard and proper English. Therefore, language used to introduce Thai tourist attractions from www.tourismthailand.org, the official tourism website of Thailand, was collected from March to April 2021 to compile the corpora. We collected the data in the menu item called Destination: See & Do. The attractions displayed on the website were divided into five regions in Thailand: north, central, south, east, and northeast. No western part is shown on the website because it is

combined with the central part. The corpora information is shown in Table 1.

Table 1. Sources and sizes of the corpora

Corpora	Number of Provinces	Number of Sources	Size (Tokens)
Northern Thai Tourist Guide Corpus (N-TTGC)	17	828	183,674
Central Thai Tourist Guide Corpus (C-TTGC)	17	920	199,911
Eastern Thai Tourist Guide Corpus (E-TTGC)	9	409	63,891
Northeastern Thai Tourist Guide Corpus (Ne-TTGC)	20	601	101,035
Southern Thai Tourist Guide Corpus (S-TTGC)	14	652	104,685
Thai Tourist Guide Corpus (TTGC)	**77**	**3,410**	**653,196**

The C-TTGC had the largest size with 199,911 running words, followed by the N-TTGC with 183,674 running words. The Ne-TTGC and the S-TTGC had similar sizes with 101,035 and 104,685 running words, respectively. Among the five corpora, the E-TTGC had the smallest size with 63,891 running words. In total, the combined corpus (TTGC) had 653,196 running words.

Research Instruments

There were three main research instruments employed in this study.

1) Software programs

1.1) AntWordProfiler (Anthony, 2020) was used to categorize words in the corpus into profiles. The program was invented and developed by Anthony and is freely downloadable from https://www.laurenceanthony.net/software/antwordprofiler/. The first 1,000 high-frequency words (West, 1953), the second 1,000 high-frequency words (West, 1953), and the Academic Word List (Coxhead, 2000) were initially set as the reference word lists in the program. The user is able to add more word lists as reference word lists depending on their purposes for constructing the word list.

1.2) VocabProfile (Cobb, 2021) is an online program invented and developed by Cobb, and can be accessed at

https://www.lextutor.ca/vp/comp/. The program is used to separate words into 26 base lists. The first to 25th base lists are divided by the word frequency rate calculated based on the words contained in the British National Corpus (BNC) and the Corpus of Contemporary American English (COCA) combined. The earlier the base list, the higher its frequency rate. Each base list contains 1,000 words. There is a variety of words that could appear in the 26th base list, the so-called off-list such as words with a lower frequency than the first-25,000 high-frequency words, misspelled words, emerging words, and transliterated words.

2) The reference word lists used with the AntWordProfiler program to process the lexical profiling consist of the first 1,000 high-frequency words (West, 1953), the second 1,000 high-frequency words (West, 1953), the Academic Word List (Coxhead, 2000), the Tourism Business Word List (Laosrirattanachai & Ruangjaroon, 2021a), and the Abbreviation List (Nation, 2018).

3) Questionnaires with a four-point rating scale applying Chung and Nation's criteria (2004) were distributed to five experts for a word list verification. Scale 1 included function words and irrelevant words to Thai tourist attractions. Scale 2 referred to words with little relation to the field. Scale 3 contained words with considerable relative meaning to the field. These words could appear in other fields, but with an irrelevant meaning to Thai tourist attractions. Scale 4 pointed to words with specific meaning to Thai tourist attractions that were not in other fields.

Corpus Analysis

According to Hyland and Tse's (2007), different technical word lists demand different criteria. In addition, we believe that the quality of a corpus used as a source for constructing a word list not only affects the generated word list but is also influential regarding the criteria needed for word list construction. In the current study, the language data from www.tourismthailand.org was compiled to create Thai Tourist Guide Corpus (TTGC). Since a website provides a page of tourist information for each attraction, some technical words might appear just a few times. Furthermore, each attraction is somehow unique. When considering how the technical words appear, it is

hardly possible to construct a technical word list for Thai tourist guides by considering the frequency, range, and keyness. In addition, technical words might appear with a low frequency considering the whole corpus, but tourist guides might have to use these technical words every time they take tourists there and conduct a tour. To prove the claims, we conducted a small study. Two word lists were created using different criteria. The first one was created based on frequency and range considerations, while the second was generated based on keyword analysis. The results showed that most of the words appearing in the word list created using frequency and range were function words and simple words from the GSL, being 236 words in total from the first 400 words with highest frequency and range. Considering the word list created using keyword analysis, 114 words were located in the GSL profile. This reflected that there were too many irrelevant words to Thai tourist attractions contained in the list using the frequency, range, and keyword analysis. Therefore, we proposed to apply lexical profiling for the first step as illustrated in Figure 1.

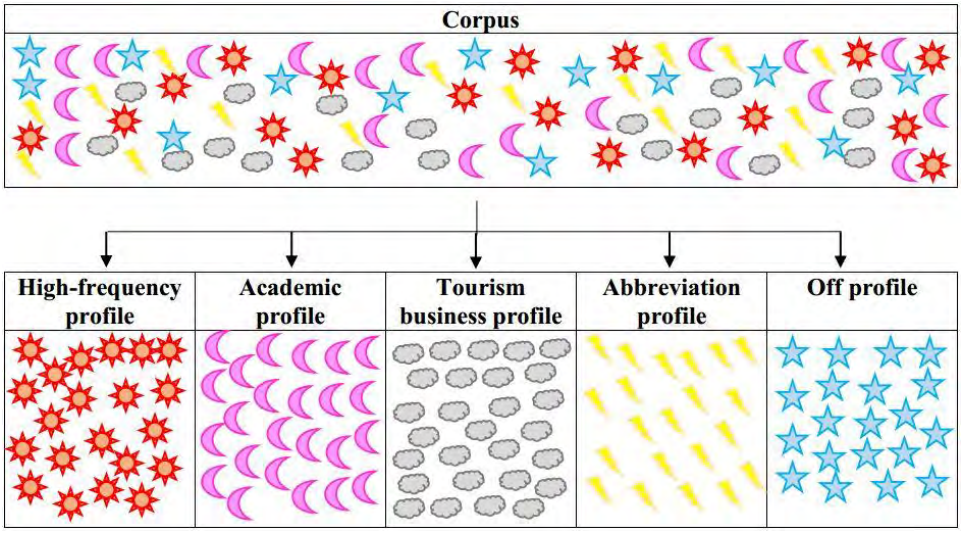

Figure 1. Illustration of lexical profiling

The language data in the corpus were analyzed and categorized in five profiles: high-frequency, academic, tourism business,

abbreviation, and off profiles. Words categorized in the off profile then proceed to the next step.

After applying lexical profiling, words in the off profile were analyzed using the VocabProfile program. Words located in the off list were eliminated since their frequency rates were too low and they were rarely used by native speakers. Therefore, they were not important enough to learn. In addition, they might be transliterated words, for example, *tambon* (sub-district) or a proper noun like *Bang Kaeo* and *Daowadueng*.

Words gathered from the first to 25th base lists were finally contained in questionnaires and distributed to five experts who were tour guides working in the industry for more than five years who used English on their tours. Any words rated 3 or 4 from three or more experts were accepted for inclusion in the technical word list for Thai tourist guides.

Results

Since there is no certified best method for constructing a word list, a word list creator needs to consider relevant factors and choose the best criteria for each word list construction. In this study, we applied the lexical profiling method as the main criterion to construct the technical word list for Thai tourist guides. The findings from this approach are described as follows.

Applying Lexical Profiling

After processing the data using the AntWordProfiler program, the data are profiled as shown in Table 2.

Table 2. Lexical profiling results

Profiles	Corpora (Tokens)				
	N-TTGC	**C-TTGC**	**E-TTGC**	**Ne-TTGC**	**S-TTGC**
First 1,000 high-frequency words	113,880 (62.00%)	125,666 (62.86%)	39,800 (62.29%)	60,960 (60.34%)	64,931 (62.03%)
Second 1,000 high-frequency words	7,598 (4.41%)	8,176 (4.09%)	2,848 (4.46%)	4,434 (4.39%)	5,100 (4.87%)
Academic Word List (AWL)	6,519 (3.55%)	7,939 (3.97%)	2,446 (3.83%)	3,632 (3.59%)	3,503 (3.35%)
Tourism Business Word List (TBWL)	14,676	14,590	5,006	7,826	9,559

Profiles	Corpora (Tokens)				
	N-TTGC	**C-TTGC**	**E-TTGC**	**Ne-TTGC**	**S-TTGC**
	(7.99%)	(7.30%)	(7.84%)	(7.75%)	(9.13%)
Abbreviation List (AL)	998 (0.54%)	689 (0.34%)	295 (0.46%)	624 (0.62%)	612 (0.58%)
Off profile	40,003 (21.78%)	42,851 (21.44%)	13,496 (21.12%)	23,559 (23.32%)	20,980 (20.04%)
Total	**183,674 (100.00%)**	**199,911 (100.00%)**	**63,891 (100.00%)**	**101,035 (100.00%)**	**104,685 (100.00%)**

Table 2 shows that most of the tokens from every part of Thailand were profiled in the first 1,000 high-frequency words, followed by the off profile and Tourism Business Word List, respectively. A comparison of the lexical coverage proportions of the corpora in this study with the conclusions proposed by many scholars showed disparate results. Nation and Waring (1997) stated that the GSL (first and second 1,000 high-frequency words combined altogether) normally covers approximately 80 per cent of a text while the GLS covers the five corpora for about 62 per cent. Coxhead (2000) claimed that the AWL covers about ten per cent of a text; however, the five corpora are covered by about 4 per cent. In contrast to what Nation and Waring (1997) and Coxhead (2000) proposed, Chung and Nation (2003) argued that the lexical coverage proportion might be different in some fields as we can see that number of words profiled in the off profile is large and they cover about 20 per cent of the five corpora. Some examples are *koh, thailand, buddha, tambon, baht, wat, reef, amphoe, coral, chumphon, mangrove, rama,* and *ngam*. However, the number of words in the off profile need to be narrowed by eliminating irrelevant words. To consider words to be included in the technical word list for Thai tourist guides, the words profiled in the off profile were analyzed in the next step.

Eliminating Off-list Words

The words in the off profile were further narrowed down using the VocabProfile for word frequency level analysis. In this step, all tokens were transformed into the type form prior to importing the data. As a result, the numbers of off profile running words of N-TTGC were narrowed from 40,003 tokens to 4,231 types, in C-TTGC from

42,851 to 4969, in E-TTGC from 13,496 to 1919, in Ne-TTGC from 23,559 to 2703, and in S-TTGC from 20,980 types to 2957 types. The findings after applying the VocabProfile are shown in Table 3.

Table 3. Results from eliminating off-list words

Profiles	Corpora (Tokens)				
	N-TTGC	**C-TTGC**	**E-TTGC**	**Ne-TTGC**	**S-TTGC**
Base lists 1-2 (1)	476	503	266	291	319
Base lists 3-5 (2)	1,268	1,410	656	826	838
Base lists 6-25 (3)	1,249	1,382	625	832	854
Off list	4,231	4,969	1,919	2,703	2,957
Total (1)+(2)+(3)	**2,993**	**3,295**	**1,547**	**1,949**	**2,011**

Table 3 shows the results of eliminating off-list words and are presented in accordance with Schmitt (2000). Base lists 1 and 2 comprised 2,000 words labeled as high frequency. Base lists 3 to 5 consisted of 3,000 words classified as mid frequency. The remaining 20,000 words contained in base lists 6 to 25 were categorized as low frequency. After eliminating words appearing in the off list and combining words appearing in base lists 1 to 25, the numbers of words passing this criterion were as follows: N-TTGC = 2,993 words, C-TTGC = 3,295 words, E-TTGC = 1,547 words, Ne-TTGC = 1,949 words, and S-TTGC = 2,011 words. Some examples were *agro, cinerary, abseiling, agate, batik, cockatoo, cotta, ecotourism, emperor, enlightenment, jackfruit, hyacinth, islet, javelin, karma, prang, raga,* and *stupa*. These words were then contained in the questionnaires with a four-point rating scale before distributing to five experts in the next step.

Expert verification

Before handing the questionnaires to the experts, words from previous criteria were transformed from type into the word family form. Therefore, the number of words was smaller, thus reducing the task for the experts. For example, *amazed, amazing,* and *amazingly* were transformed to *amaze,* such that three types were narrowed down to one word family. After the transformation, the number of words decreased as follows: from 2,993 to 2,285 for N-TTGC, from 3,295 to 2,505 for C-TTGC, from 1,547 to 1,276 for E-TTGC, from 1,949 to 1,545 for Ne-TTGC, and from 2,011 to 1,606 for S-TTGC.

In the current study, five experts were asked if they agreed with the words in the lists. Words with a mode value of 3 or 4 agreeably rated by at least three experts were added to the word lists. The questionnaires were distributed to the five experts, and their feedback is shown in Table 4.

Table 4. Expert verification results

Word lists	Input	Feedback
Technical word list for northern Thai tourist guide	2,285	245
Technical word list for central Thai tourist guide	2,505	264
Technical word list for eastern Thai tourist guide	1,276	138
Technical word list for northeastern Thai tourist guide	1,545	187
Technical word list for southern Thai tourist guide	1,606	176
Technical word list for Thai tourist guide*		391

Table 4 shows the final sets of words contained in the word lists. In conclusion, the technical word lists for the northern, central, eastern, northeastern and southern Thai tourist guides contained 245, 264, 138, 187, and 176 words, respectively. The proposed technical word list for Thai tourist guides overall involved combining the five sub word lists, with repeated words deleted. Consequently, the combined technical word list contained 391 words.

We found that some words appeared in more than one sub word lists and could occur in as many as five sub word lists (Table 5).

Table 5. Words shared among five sub word lists

Number of sub word lists	Number of words	Examples
5	86	*alms, abbot, agro, banyan, bead, bench, coral, corridor, dam, fountain, gable, homage, inherit, jade, laterite, myth, nirvana, ordination, pagoda, ritual, shrine, textile, vendor*
4	44	*accession, anchor, attire, bestow, charity, crockery, disseminate, enchant, fang, gulf, horn, ivory, kiln, lintel, mangrove, novice, petal, silverware, sin, tricycle*
3	42	*abbess, adhere, arc, aristocrat, bangle, cavern, celestial, chronicle, clan, divine, embellish, flourish, garuda, incense, naga, pedestal, rebel, reservoir, sermon, terracotta, tribute*
2	60	*abyss, apostle, ashore, basilica, batik, celadon, chateau, dock, dugong, engrave, furnace, gamble, hostage, javelin, lore, marigold, otter, paddle, ruby, sarong, throne, urn*
1	159	*afforestation, bungee, cabaret, dyke, emigrate, foundry, gamelan, hillock, insignia, lullaby, manatee, puppet, swiftlet, talisman, underworld, wagon, xylophone, yantra*
Total	**391**	

Table 5 shows that there were 86 words shared among the five sub word lists. However, 159 words appeared in only one sub word list. This reflected the uniqueness and importance of words used in different parts of Thailand. In fact, teachers can make use of the shared words to design course and learning materials. For example, instead of assigning learners to study word lists part-by-part, teachers might start by assigning learners to study words shared among the five sub word lists moving finally to words that appear only in one sub word list. The shared words are illustrated with authentic language data from corpora below.

Word shared among five sub word lists

Thread I: **alms**

North: *Monks and novices will come to ask for **alms** every morning from 7:00-7:30 am, or until 8:00 am if there are a lot of visitors.*

Centre: *Since it is situated in the community area, in the morning the monks in this temple go to ask for **alms** from the villagers.*

East: *Having noticed that there was a monk staying there, people who came to do farming nearby the temple regularly took **alms** to offer to him.*

Northeast: *In the morning, people will do **alms** offerings with sticky rice and when the sun goes down, it is a time for riding a bike and shopping various souvenirs that are offered all through this road.*

South: *In 1842, King Nangklao gave a piece of Javanese cassia woo a large candle, and offerings given as **alms** to Phraya Songkhla to make the city pillar.*

Word shared among four sub word lists

Thread II: **ivory**

North: *The biggest part of the **ivory** has the diameter of 47 centimeters.*

Centre: *Wat Khao Wongphrachan has nine miracle objects including a real fourth Buddha's footprint, Buddha's tooth, Luang Poo Fak, a 93-year-old abbot who is a vegetarian and has never had a shower throughout his life, Buddha's bones, Billion Museum, the longest stairs on the mountain, a natural small phallic sculpture tree, a buffalo with three horns, and black* ***ivory****.*

Northeast: *This library houses many ancient objects such as 198 palm leaf manuscripts carrying Buddhist scriptures which are kept in a cabinet, a carved horn, and an* ***ivory****.*

South: *Phra Buddha Mongkolchai Munee is a huge image of Buddha in subduing Mara attitude. It has a splendid* ***ivory*** *color, especially in the night when the moonlight shines on, it is like there is an aura hangs around the image of Buddha.*

Word shared among three sub word lists

Thread III: **novice**

North: *When he was 18 years old, he was ordained as a* ***novice*** *at Watbanpang.*

Centre: *The royal chapel does not have any monks and* ***novice*** *inhabitants.*

Northeast: *Luang Pu Jahn had become a* ***novice*** *since 10 years old on 9th April in 1891 before turned into monk at 20.*

Word shared between two sub word lists

Thread IV: **wicker**

North: *Later, many government sectors such as Community Development Department Phayao Province and Industrial Development Department Phayao Province has hired the lecturers to provide knowledge about how to sun-dry the water hyacinth and bake in*

*sulphur to handicraft them into products such as egg-shaped **wicker** baskets, saucers and others*

Centre: *Visitors can also find handicrafts such as **wicker** furniture, pottery, and colorful sarongs made locally.*

Thread V: **sarong**

Centre: *There are good-quality woven clothes e.g. **sarong**, bathing cloth, etc.*

Northeast: *Hole Proh is a Mud silk of Thai-Khmer in the south northeastern area. It is used to weave **sarong** for men.*

Words appeared solely in one sub word list

Thread VI: **anthem**

North: *In order to make the flag go to the highest point which is around 200 meters above the ground, people have to sing Thailand's national **anthem** about 12 times.*

Thread VII: **decapitation**

Centre: *The sentence of such negligence according to the ancient monarch law was **decapitation**.*

Thread VIII: **monastic**

East: *Covering an area of 500 rai, this **monastic** residence and meditation center is located at Tambon Pa Yup Nai.*

Thread IX: **brocade**

Northeast: *The prominence of the Chansoma golden **brocade** stems from the selection of fine and delicate silk threads from the innermost part of the silk cocoon to be bleached, boiled, and dyed with natural substances.*

Thread X: **brackish**

South: *Currently, peat swamps are very shallow and **brackish** water becomes freshwater.*

Discussion

After passing all criteria used in the current study, the technical word list for Thai tourist guide comprised 391 words. The first 391 words of the two word lists created using frequency and range and keyword analysis were then compared with the technical word list for Thai tourist guides. Most of the words appearing in the word list created using frequency and range were function words and simple words from the GSL, being 236 words in total. Only five words were shared with the technical word list for Thai tourist guides. Considering the word list created using keyword analysis, there were only 18 words shared with the technical word list for Thai tourist guides. These results explained why using frequency, range, and keyword analysis as criteria for determining a technical word list for Thai tourist guides was not robust or sufficient.

Table 3 in the result section shows the base lists of words of each sub word list by category. The results of applying the VocabProfile with the technical word list for Thai tourist guides are shown in Table 6.

Table 6. Words appearing in base lists separated by frequency level

Profiles	**Remark**	**Words**	
		Number	**Per cent**
Base lists 1-2 (2,000 words)	High-frequency word	6	1.53
Base lists 3-5 (3,000 words)	Mid-frequency word	132	33.76
Base lists 6-25 (20,000 words)	Low-frequency word	253	64.71
Total (25,000 words)		**391**	**100.00**

Table 6 confirms that most of the words (253 words or about 64.71 per cent) were classified in base lists 6 to 25 which were labelled as low-frequency words. According to Schmitt (2000), this is a good sign for learning this word list for their future careers as he claimed that learners should acquire low-frequency words specific to their interests after mastering 2,000 high frequency words and 3,000 mid-frequency words for career purposes. There were six words (about 1.53 per cent) appearing in base lists 1 and 2, such as *protest, dawn,* and *pole*, and 132 words (about 33.76 per cent) appearing in base lists 3 to 5, such as *fabric, inherit, myth, ritual*, and *sin*. These

words were categorized into the lists of high- and mid-frequency words and should be mastered prior to acquiring technical terms for Thai tourist guides. However, they were clearly all required in conducting tours and that made them essential inclusions in the technical word list for Thai tourist guides.

Pedagogical Implications

An important pedagogical implication is for teachers to consider using the technical word list for Thai tourist guides as part of their explicit and deliberate vocabulary teaching and learning with their tourism students. According to Schmitt (2000), explicit learning occurs when a learner pays attention to and focuses on analyzing and learning vocabulary. Nation (1990) also recommended practicing using words more than five times after learning them for vocabulary retention. However, this method takes quite a long time to accomplish. Therefore, we suggest using the word list as supplementary vocabulary learning materials and tracking students' learning processes periodically. Most teachers often assign learners to study a word list themselves and leave the approach of learning up to the learners. However, this approach was not favored and was viewed as boring by North American learners (Lessard-Clouston, 2013). Instead, teachers should provide useful texts with relevance to the word lists to increase the opportunity of encountering words repeatedly. Testing learners intermittently also helps teachers to track learners' vocabulary development. Giving assignments might sound simple and easy, but it still produces an impact on learning vocabulary. Compared to the past, today's young learners are totally different from teachers, and they change their ways of thinking, working, learning, and living (Prensky, 2006). Therefore, we recommend that teachers improve and adapt themselves to suit the generation of the learners. This may involve beginning with assigning writing assignments using words in the list, followed by creating a dialogue and role playing to entertain a class. When the students are familiar with the list, teachers can then allow them to shoot a video clip related to Thai tourist attractions and share their works on online

social media such as Facebook, YouTube, TikTok, and Twitter. These activities could satisfy learners'interest and promote vocabulary learning and acquisition simultaneously.

Since language and culture are inseparable (Jiang, 2000; Xu 2009), learning language and culture together enables learners to be more successful (Ho, 2009; Valdes, 1986). The findings of the current study led to a conclusion that apart from teaching vocabulary solely, the culture and lifestyle of each region can be taught simultaneously through the occurrence across five sub word lists as the cultures and lifestyles were reflected through the similarity shared and uniqueness of each regional word list. For instance, the words *alms, abbot, pagoda, ritual*, and *shrine* appeared in all five sub word lists. This reflected that Thai people throughout Thailand adhere to Buddhism, which is influential in the local cultures and lifestyles in every part of Thailand. While words related to Buddhism often appeared in all five sub word lists, words such as *ashore, dock,* and *dugong* appeared in the technical word list for eastern and southern Thai tourist guides, thus indicating that the local culture and way of life of eastern Thai and southern Thai people are associated with sea and marine fauna. We thus recommend teachers to make use of the similarity and uniqueness of each regional word list to develop teaching materials and lessons for Thai tourist guides.

At a specific time, a learner normally possesses the knowledge of word meaning before developing to word collocations based on prior word knowledge (Schmitt, 2000). Many scholars advise utilizing data-driven learning as a means of learning vocabulary more productively (Boulton, 2017; Conrad, 2000; Johns, 1994; Laosrirattanachai & Ruangjaroon, 2021b; MaCarten, 2007; Reppen, 2010). Assigning learners to practice using a program such as AntCont (Anthony, 2019) to view the concordance could enable them to realize the use of the language in authentic contexts. Utilizing concordance also contributes to the learning of word collocations or multi-word units. Some scholars (Hoshino, 2010; Xue & Nation, 1984) have affirmed that learning word collocations helps learners to comprehend word

usage more clearly. Some concordance examples of the word '*alms*' are provided in Figure 2 below.

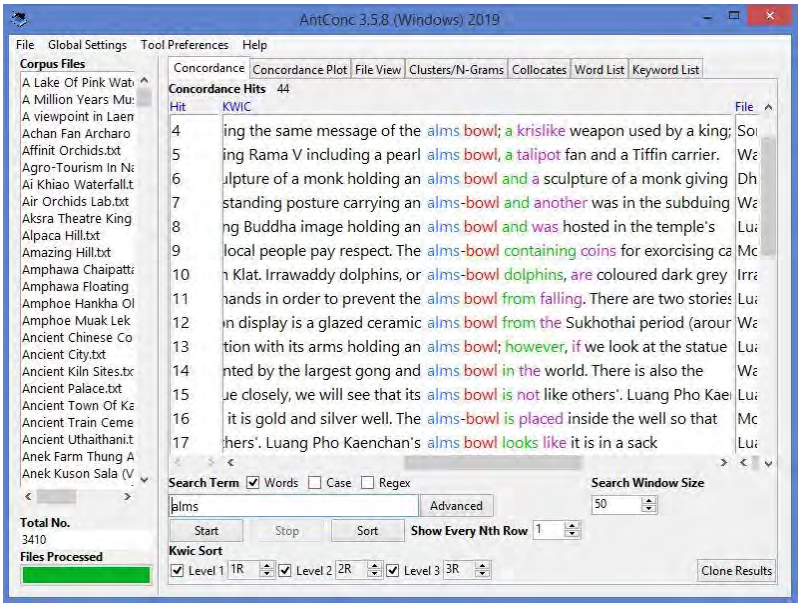

Figure 2. Concordance results of the word '*alms*'

Figure 2 shows that alms collocated with bowl as many as 30 times. This could make learners realize that alms often collocated with bowl and enable them to form a word collocation 'alms bowl' providing them with further vocabulary knowledge.

Limitations of the Study

The limitation of the current study was the genre of language data. The data collected in the present study were in a written form, while the purpose of constructing this word list was for spoken language, i.e. tour conducting. However, collecting language data from tourist guides conducting a tour in real situations consumed a lot of effort and time. Since we expected to extract terminology used in conducting tours in Thailand, authentic language data used in promoting Thai destinations from the official tourism website should be adequate. Those aspirants who intend to work in the tourism industry should find that the lists are useful for them to familiarize themselves with Thai tourist guide terminology. To develop teaching materials for Thai tourist guide courses, we suggest collecting data

from tour conducting situations to create the list of word collocations, lexical bundles, or formulaic language in future studies. Learning the lists of the current study and the lists from the recommended studies would certainly enhance the effectiveness of learning outcomes.

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Appendix

The technical word list for Thai tourist guide (391 words)

Remarks:

N refers to the occurrence of a word in the technical word list for northern Thai tourist guide.

C refers to the occurrence of a word in the technical word list for central Thai tourist guide.

E refers to the occurrence of a word in the technical word list for eastern Thai tourist guide.

NE refers to the occurrence of a word in the technical word list for northeastern Thai tourist guide.

S refers to the occurrence of a word in the technical word list for southern Thai tourist guide.

No.	Words	N	C	E	NE	S
1	abbot	✓	✓	✓	✓	✓
2	abundant	✓	✓	✓	✓	✓
3	agro	✓	✓	✓	✓	✓
4	alliance	✓	✓	✓	✓	✓
5	alms	✓	✓	✓	✓	✓
6	altar	✓	✓	✓	✓	✓
7	amateur	✓	✓	✓	✓	✓
8	amulet	✓	✓	✓	✓	✓
9	ancestor	✓	✓	✓	✓	✓
10	antique	✓	✓	✓	✓	✓
11	aquarium	✓	✓	✓	✓	✓
12	arboretum	✓	✓	✓	✓	✓
13	auspicious	✓	✓	✓	✓	✓
14	banyan	✓	✓	✓	✓	✓
15	bead	✓	✓	✓	✓	✓
16	bench	✓	✓	✓	✓	✓
17	blossom	✓	✓	✓	✓	✓
18	bodhisattva	✓	✓	✓	✓	✓
19	bureau	✓	✓	✓	✓	✓
20	cascade	✓	✓	✓	✓	✓
21	catfish	✓	✓	✓	✓	✓
22	chapel	✓	✓	✓	✓	✓
23	commemorate	✓	✓	✓	✓	✓
24	consecrate	✓	✓	✓	✓	✓
25	consort	✓	✓	✓	✓	✓
26	coral	✓	✓	✓	✓	✓
27	corridor	✓	✓	✓	✓	✓
28	dam	✓	✓	✓	✓	✓
29	dawn	✓	✓	✓	✓	✓
30	deity	✓	✓	✓	✓	✓
31	donate	✓	✓	✓	✓	✓
32	dusk	✓	✓	✓	✓	✓

No.	Words	N	C	E	NE	S
33	dye	✓	✓	✓	✓	✓
34	dynasty	✓	✓	✓	✓	✓
35	elaborate	✓	✓	✓	✓	✓
36	emerald	✓	✓	✓	✓	✓
37	epic	✓	✓	✓	✓	✓
38	extinct	✓	✓	✓	✓	✓
39	fabric	✓	✓	✓	✓	✓
40	fare	✓	✓	✓	✓	✓
41	fertile	✓	✓	✓	✓	✓
42	folklore	✓	✓	✓	✓	✓
43	fountain	✓	✓	✓	✓	✓
44	gable	✓	✓	✓	✓	✓
45	gigantic	✓	✓	✓	✓	✓
46	gild	✓	✓	✓	✓	✓
47	harmony	✓	✓	✓	✓	✓
48	hermit	✓	✓	✓	✓	✓
49	homage	✓	✓	✓	✓	✓
50	inherit	✓	✓	✓	✓	✓
51	inscription	✓	✓	✓	✓	✓
52	invade	✓	✓	✓	✓	✓
53	jade	✓	✓	✓	✓	✓
54	laterite	✓	✓	✓	✓	✓
55	lunar	✓	✓	✓	✓	✓
56	merit	✓	✓	✓	✓	✓
57	moat	✓	✓	✓	✓	✓
58	monastery	✓	✓	✓	✓	✓
59	mural	✓	✓	✓	✓	✓
60	myth	✓	✓	✓	✓	✓
61	nirvana	✓	✓	✓	✓	✓
62	nun	✓	✓	✓	✓	✓
63	oath	✓	✓	✓	✓	✓
64	ordination	✓	✓	✓	✓	✓

No.	Words	N	C	E	NE	S
65	pagoda	✓	✓	✓	✓	✓
66	patriarch	✓	✓	✓	✓	✓
67	patronage	✓	✓	✓	✓	✓
68	pavilion	✓	✓	✓	✓	✓
69	pediment	✓	✓	✓	✓	✓
70	pillar	✓	✓	✓	✓	✓
71	pole	✓	✓	✓	✓	✓
72	pulpit	✓	✓	✓	✓	✓
73	rattan	✓	✓	✓	✓	✓
74	reign	✓	✓	✓	✓	✓
75	relic	✓	✓	✓	✓	✓
76	replica	✓	✓	✓	✓	✓
77	ritual	✓	✓	✓	✓	✓
78	shrine	✓	✓	✓	✓	✓
79	stalactite	✓	✓	✓	✓	✓
80	stalagmite	✓	✓	✓	✓	✓
81	stall	✓	✓	✓	✓	✓
82	stupa	✓	✓	✓	✓	✓
83	subdue	✓	✓	✓	✓	✓
84	teak	✓	✓	✓	✓	✓
85	textile	✓	✓	✓	✓	✓
86	vendor	✓	✓	✓	✓	✓
87	accession	✓	✓		✓	✓
88	allegiance	✓	✓		✓	✓
89	alley	✓	✓	✓	✓	
90	ambience	✓	✓	✓		✓
91	anchor	✓	✓		✓	✓
92	apex	✓	✓	✓	✓	
93	asphalt	✓	✓		✓	✓
94	attire	✓	✓		✓	✓
95	bestow	✓	✓	✓	✓	
96	canopy	✓	✓		✓	✓
97	cemetery	✓	✓		✓	✓
98	charity	✓	✓	✓	✓	
99	clergy	✓	✓		✓	✓
100	coffin	✓	✓		✓	✓
101	corpse	✓	✓		✓	✓
102	crockery	✓	✓	✓		✓
103	disseminate	✓	✓		✓	✓
104	doctrine	✓	✓		✓	✓
105	elegant	✓	✓	✓		✓
106	enchant	✓	✓	✓		✓
107	fang	✓	✓		✓	✓
108	forefather	✓	✓		✓	✓
109	fortress	✓	✓	✓		✓
110	gong	✓	✓	✓	✓	
111	gulf	✓	✓	✓		✓
112	horn	✓	✓		✓	✓
113	hyacinth	✓	✓	✓		✓
114	incantation	✓	✓	✓	✓	
115	incarnate	✓	✓		✓	✓
116	intrude	✓	✓	✓		✓
117	ivory	✓	✓		✓	✓
118	kiln	✓	✓	✓	✓	
119	lintel	✓	✓	✓	✓	
120	mangrove	✓	✓	✓		✓
121	morale	✓	✓	✓	✓	
122	novice	✓	✓	✓	✓	
123	omen	✓	✓		✓	✓
124	petal	✓	✓		✓	✓
125	pilgrim	✓	✓		✓	✓

No.	Words	N	C	E	NE	S
126	pioneer	✓	✓		✓	✓
127	precept	✓	✓		✓	✓
128	sandalwood	✓	✓	✓	✓	
129	silverware	✓	✓		✓	✓
130	sin	✓	✓		✓	✓
131	tricycle	✓	✓	✓	✓	
132	abbess	✓	✓	✓		
133	adhere	✓		✓		✓
134	aesthetic	✓	✓		✓	
135	affiliate	✓	✓	✓		
136	arc	✓	✓			✓
137	arcade	✓	✓			✓
138	aristocrat	✓	✓		✓	
139	bangle	✓		✓	✓	
140	belfry	✓	✓		✓	
141	betel	✓	✓			✓
142	bumpy	✓			✓	✓
143	canon	✓	✓	✓		
144	casket	✓	✓			✓
145	cavern	✓	✓			✓
146	celestial	✓	✓		✓	
147	chronicle	✓	✓	✓		
148	clan	✓	✓		✓	
149	concubine	✓	✓			✓
150	conserve		✓		✓	✓
151	dike	✓	✓		✓	
152	divine	✓	✓			✓
153	embellish	✓	✓		✓	
154	flourish	✓	✓		✓	
155	frontier	✓	✓		✓	
156	garland	✓	✓		✓	
157	garuda	✓	✓		✓	
158	incense	✓			✓	✓
159	indigo	✓	✓		✓	
160	inlay	✓	✓			✓
161	loom	✓	✓		✓	
162	lure	✓	✓			✓
163	mahout	✓	✓		✓	
164	mystic	✓	✓			✓
165	naga	✓	✓		✓	
166	pedestal	✓	✓		✓	
167	pestle	✓	✓			✓
168	rebel	✓		✓		✓
169	reservoir		✓	✓	✓	
170	sermon		✓	✓	✓	
171	terracotta	✓	✓	✓		
172	tribute	✓	✓		✓	
173	abyss	✓			✓	
174	apostle		✓	✓		
175	ashore			✓		✓
176	basilica	✓		✓		
177	batik			✓		✓
178	benediction	✓				✓
179	binoculars	✓				✓
180	bondage	✓				✓
181	bower	✓				✓
182	buttress	✓				✓
183	canvas	✓	✓			
184	carnivore	✓			✓	
185	cavity	✓				✓
186	celadon	✓	✓			

No.	Words	N	C	E	NE	S
187	chateau	✓				✓
188	congregate	✓				✓
189	corbel	✓	✓			
190	courtier	✓			✓	
191	devout	✓		✓		
192	dock			✓		✓
193	dugong			✓		✓
194	engrave		✓		✓	
195	enlighten		✓		✓	
196	fable	✓			✓	
197	fatal	✓	✓			
198	fiddle		✓		✓	
199	furnace	✓		✓		
200	gamble	✓	✓			
201	garbage	✓		✓		
202	greenery	✓			✓	
203	heir	✓				✓
204	heyday	✓	✓			
205	hornbill		✓		✓	
206	hostage	✓	✓			
207	javelin	✓	✓			
208	legacy	✓	✓			
209	lore	✓	✓			
210	marigold	✓			✓	
211	mascot	✓	✓			
212	meadow	✓			✓	
213	meditate		✓		✓	
214	meritorious		✓		✓	
215	mermaid		✓			✓
216	monarch	✓	✓			
217	otter			✓		✓
218	paddle		✓	✓		
219	pandanus	✓	✓			
220	pier		✓	✓		
221	porridge	✓				✓
222	primitive	✓		✓		
223	regalia	✓	✓			
224	reincarnating	✓			✓	
225	ruby	✓	✓			
226	sarong		✓		✓	
227	slate	✓	✓			
228	stingray		✓			✓
229	superstition	✓			✓	
230	throne		✓		✓	
231	urn	✓	✓			
232	wicker	✓	✓			
233	abode		✓			
234	accomplish		✓			
235	adultery	✓				
236	afforestation		✓			
237	aggression	✓				
238	almshouse		✓			
239	alto		✓			
240	amphitheatre		✓			
241	annals		✓			
242	anoint		✓			
243	anthem	✓				
244	antiquity				✓	
245	antler	✓				
246	archangel				✓	
247	archipelago					✓

No.	Words	N	C	E	NE	S
248	architrave	✓				
249	areca	✓				
250	aroma		✓			
251	arsenal	✓				
252	artery		✓			
253	artifact		✓			
254	artillery	✓				
255	artisan		✓			
256	ascetic		✓			
257	attic	✓				
258	auction	✓				
259	auditorium		✓			
260	auspices		✓			
261	banister			✓		
262	barge			✓		
263	barn				✓	
264	barque		✓			
265	beatify		✓			
266	beeswax		✓			
267	behead		✓			
268	berth			✓		
269	besiege		✓			
270	bight				✓	
271	brackish					✓
272	brahman		✓			
273	breed				✓	
274	brigade	✓				
275	briny				✓	
276	brittle	✓				
277	brocade				✓	
278	buck	✓				
279	bungee			✓		
280	cabaret			✓		
281	canoe					✓
282	cashew					✓
283	chaff				✓	
284	chestnut		✓			
285	cloister		✓			
286	clownfish					✓
287	cocoon				✓	
288	colossal	✓				
289	conifer					✓
290	contaminant	✓				
291	coup		✓			
292	cove					✓
293	creek		✓			
294	cremains	✓				
295	crouch		✓			
296	curator		✓			
297	custody	✓				
298	dagger		✓			
299	decapitate		✓			
300	decree		✓			
301	deforest		✓			
302	democracy		✓			
303	dignity		✓			
304	disembark			✓		
305	dismantle			✓		
306	dolphin			✓		
307	dun				✓	
308	durian		✓			

No.	Words	N	C	E	NE	S
309	dyke		✓			
310	emigrate		✓			
311	enthrone		✓			
312	eschatology		✓			
313	esteem		✓			
314	eulogy				✓	
315	evacuate		✓			
316	exposition		✓			
317	exquisite		✓			
318	famine	✓				
319	fateful	✓				
320	fin					✓
321	foundry	✓				
322	gamelan	✓				
323	geyser	✓				
324	gondola		✓			
325	gracious				✓	
326	granary	✓				
327	guardian		✓			
328	gull					✓
329	hallow		✓			
330	harp		✓			
331	herd		✓			
332	hideout	✓				
333	hillock					✓
334	insignia		✓			
335	isle					✓
336	lavish	✓				
337	lullaby	✓				
338	manatee					✓
339	masonry	✓				
340	millstone	✓				
341	mobilise	✓				
342	monastic			✓		
343	monsoon					✓
344	mosque					✓
345	moulding				✓	
346	mourn		✓			
347	nativity		✓			
348	noose	✓				
349	octagon				✓	
350	ossuary	✓				
351	pheasant				✓	

No.	Words	N	C	E	NE	S
352	planetarium		✓			
353	precursor				✓	
354	primeval				✓	
355	prophet	✓				
356	prostrate	✓				
357	protest		✓			
358	puppet		✓			
359	rectangle				✓	
360	reptile		✓			
361	rhombus				✓	
362	salute	✓				
363	scythe		✓			
364	seahorse					✓
365	shoal					✓
366	sickle				✓	
367	spawn					✓
368	sponge					✓
369	stern					✓
370	stronghold		✓			
371	submerge					✓
372	supernatural		✓			
373	swiftlet					✓
374	talisman		✓			
375	tern					✓
376	tertiary				✓	
377	tetrahedron				✓	
378	tiffin		✓			
379	tile				✓	
380	turbine					✓
381	turret		✓			
382	tusk		✓			
383	typhoon					✓
384	underworld				✓	
385	wagon		✓			
386	warehouse		✓			
387	weir		✓			
388	wholesale		✓			
389	xylophone		✓			
390	yantra		✓			
391	yarn				✓	