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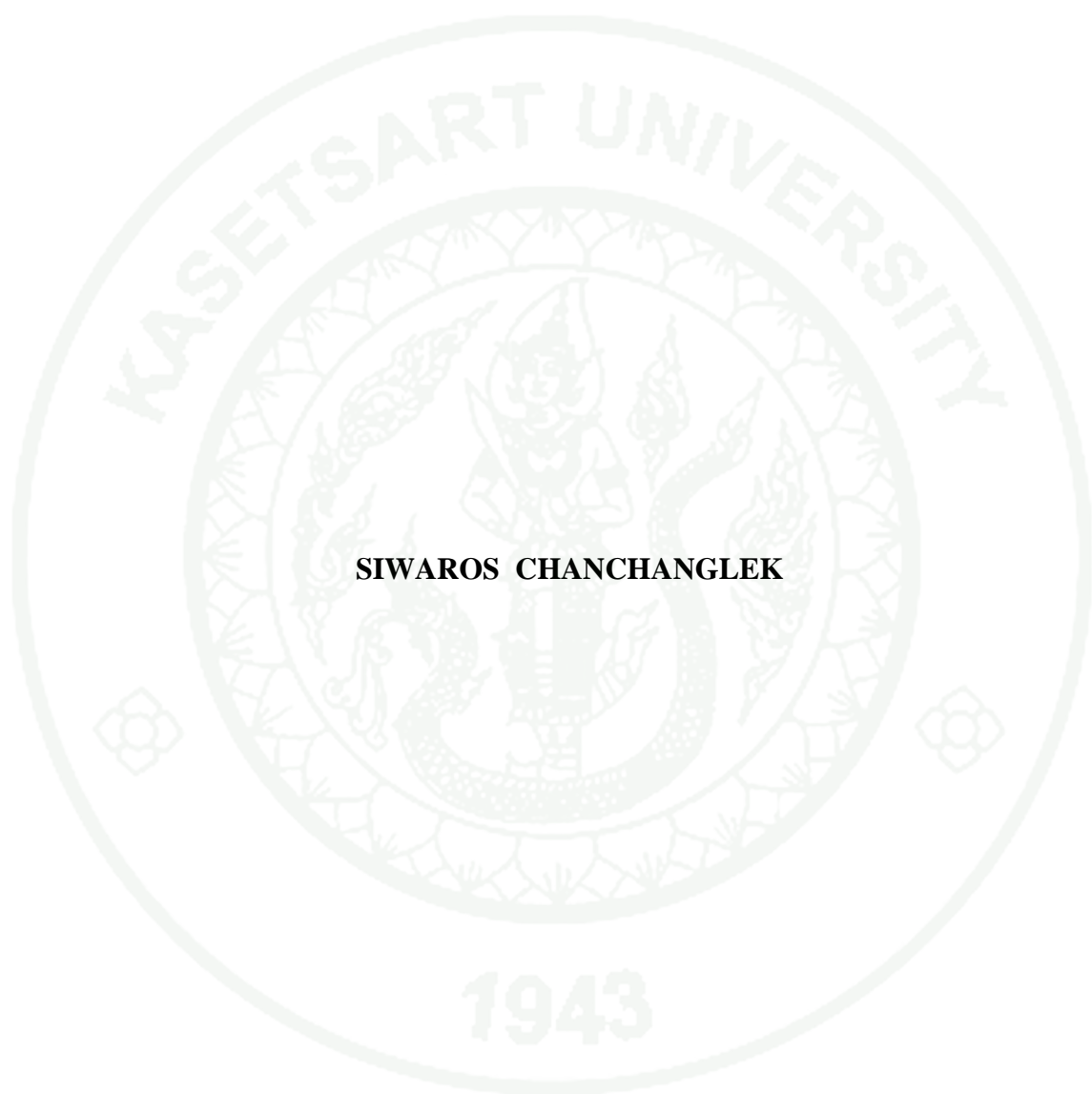
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THESIS

**A CORPUS ANALYSIS OF ENGLISH VOCABULARY INPUT IN
COURSE MATERIALS USED FOR ENGINEERING STUDENTS**



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**A Thesis Submitted in Partial Fulfillment of
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The purpose of the study was to analyze vocabulary input in English for Engineering courses in three areas: 1) proportion of general service vocabulary input based on the general service list (GSL) 2) proportion of academic vocabulary input based on the academic word list (AWL) and 3) most frequently used academic words in the study in order to build the corpus of academic words for Engineering. The materials were textbooks in English for Engineering courses collected from universities running English for Engineering courses: 1) Thammasart University (TU) 2) Rangsit University (RSU) 3) Rajamangala University of Technology (RMUT). The lexical analysis software applied in the study was WordSmith.

The findings revealed that the majority (around 80%) of every text were comprised of general service words and printed course materials from RSU showed the highest coverage of general service words with over 84%. Moreover, 1,591 general service words or two thirds of the GSL were found in the analysis. Regarding academic words, they accounted for 6 % in each text approximately. Finally, the study revealed that 363 academic words out of 570 in the AWL were found and RMUT corpus was comprised of the least proportion of academic words with 5.61%. The findings provide some fundamental and practical vocabulary input for the teachers of English for academic purposes and course designers for Engineering students.

Student's signature

Thesis Advisor's signature

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CHAPTER I

INTRODUCTION

Statement of the Problem

The concept of English for specific purposes (ESP) has grown to become one of the most prominent areas of EFL teaching since the 1960s. ESP has played a vital role as a medium to English teaching in order to make a decision to create content and a strategy which can effectively respond to the needs of language learners for particular purposes or professional careers (Dudley-Evans and John, 1998; Hutchinson and Waters, 1987). ESP has therefore grown to become one of the most noticeable areas of English teaching. McMurray (1998) states that ESP has established itself as a viable and vigorous movement within the field of teaching English as a foreign language (TEFL) in parallel to developments in science, technology, and business world; therefore, there has been a great deal of improvement in curriculum development in this TEFL and the application of findings of ESP researches continues to increase and expand throughout the world.

Thus in Thailand, there has been a significant increase in demand for ESP for non-native English speakers (NNES). During the past two decades, as a developing country, a rapid growth in science, business, and technology has been seen in Thailand. This has heightened the relevance of ESP to the current or future professional activities of the learners. McMurray (1998) emphasizes the role of English in the Asian region by saying that the tide of world trade, Asia's increasingly significant role in international tourism, and the emergence of English as the language of technology are three principle factors maintaining demand for the language to be strong. The incorporation of ESP courses into syllabi, as a result, is conducted in many colleges and universities in Thailand.

As the number of various ESP programs increase, English for Science and Technology (EST) is one of the most essential ESP programs. Crosby (1987), Ulrich (1996), and Wood (1997) note that the growth in science and technology is rapid, and research papers, journals, reports, articles and abstracts conducted in this field are published in English. Swales (2000) also maintains “almost all of many new journals that are available over the world have an English-only submission policy.” EST is a beneficial choice for graduated students of the Faculty of Sciences and Technology who are interested to enrich the scientific and technical English language because most textbooks, information sources (The World Wide Web and CD-ROMs) and other literature on their disciplines relevant to their educational lives are written in English.

It has been a staple of Thai education policy for at least 30 years that undergraduates in science and Engineering should study their specialist subject matter by reading textbooks in English (Prapphal, 2001). Engineering university students have to use English as a basis for exploring new knowledge and information in their own fields of study. It has been generally accepted for many years that the ability to read depends on the first instance on adequate linguistic, especially lexical knowledge (Alderson 1984). However, over the past 30 years or so it has become apparent undergraduate Engineering students do not have enough basic linguistic knowledge and vocabulary to read texts in English (Nurweni and Read, 1999). Although reading skills are emphasized in Thailand and Thais have all studied for at least six years at secondary school and indeed probably before that, university students have still confronted the difficulties of lexis and reading. Furthermore, the finding of several studies investigating the ability of English reading in Thai students agree that limited vocabulary seems to most impede students' English reading ability (Thammongkol, 1970; Wiruhayan, 1987; Chan-udom, 1993; Sukrangsun, 1993; Adunyarittigun, 1999 and Limtrakarn, 1999).

A variety of interesting questions related to teaching and learning English in Thailand have been raised from the findings of the studies investigating the ability of English reading in Thai students. For instance, how many words of vocabulary should

students know and learn?, in what way should that vocabulary be taught to students?, and what strategies do learners use to acquire vocabulary? Another consideration focuses on vocabulary input. That is, how do teachers or course designers decide which and how much vocabulary should be incorporated? Lastly, how do they ensure that the learners gain the most advantage from their learning time and effort?. Consequently, Hill (1997:5) suggests that “Instead of being language practisers, we should be language providers.”

To have a basis for comprehending a text written in English, the most common paradigm for this lexical problem comes from the work of Paul Nation and his associates. The chief approaches are that learners should learn first the 2000 or General Service Word List (GSL) by West (1953) as well as a set of academic words common to all academic disciplines. In practice this is taken to mean the 2000-word family and the 570-word family Academic Word List or AWL (Coxhead, 2000). The course designers and English teacher, thus, have to consider both common words used and technical terms when designing teaching material for their students.

This leads to the interest in the study of corpus-based analysis that has been developed as another resource for developing English proficiency. Hunston (2002) defines corpus as representative of how texts can be collected, contained and accessed by specific software program so that concordance lines are presented and frequencies are calculated. Likewise, Kennedy (1998: 136) claims “a corpus is, of itself, a rich resource of authentic data containing structures, patterns and predictable features that are waiting to be “unblocked” by the human intelligence.”

There are a number of advantages in corpus-based approach for developing teaching materials. Thurstun and Candlin (1998) mention that corpus-based study has a potential role to play in expanding the target vocabulary of the learners. That is, the outputs gained from corpus-based study resulting in practical input of materials used in classroom. Therefore, course designers and teachers can get information from authentic sources. Flowerdew (1997) explains that the value of the corpus based word list lies in the fact that course designers can be certain that the selected words are the

most relevant and useful for learners. It also provides criteria for teacher to choose the materials or textbooks, syllabus selection and grading of lexical items; therefore, it is a very practical and effective tool.

Consequently, investigating the vocabulary input of the course material in an English course, regarding frequency in particular, is worthwhile to see what vocabulary is actually taught to students and whether the materials are suitable for a specific group of learners. Such research can contribute to pedagogy for non-native English speakers. The samples of the study, moreover, can be employed as the guideline for designing a course.

Objectives of the Study

This study aims to examine the vocabulary input of in English for Engineering courses to find out what vocabulary Engineering students should know. The study focuses on the following purposes:

1. To compare vocabulary appearing in intensive English for Engineering courses with the General Service List (GSL) (Bauman and Culligan, 1995) so as to find out proportion of vocabulary input based on the General Service List (GSL).
2. To compare vocabulary appearing in intensive English for Engineering courses with the Academic Word List (AWL) (Coxhead, 1998) so as to find out proportion of vocabulary input based on the Academic Word List (AWL).
3. To find out the most frequently used academic vocabularies in a corpus of Engineering texts.

Research Questions

1. To what extent does the vocabulary input appear in the course materials in the list of GSL?

2. To what extent does the vocabulary input appear in the course materials are in the list of AWL?

3. What are the most frequently used academic vocabularies in a corpus of English for Engineering texts?

Scope of the Study

The study focused on analyzing English reading materials or workbooks in English for Engineering courses in both private and government universities in the 2009-2010 academic year.

Research Contribution

The results of the study contribute to the field of ESP pedagogy. That is, the findings may provide some fundamental and practical vocabulary input for the teachers of English for academic purposes and course designers for Engineering students. The study, in addition, may be useful for teachers in selecting and appropriate materials for Engineering students. Finally, vocabulary frequency analysis can assist a teacher to judge if the vocabulary input in course materials is valuable or appropriate for Engineering students.

Definition of Key Terms

Corpus: A collection of linguistic data, either written texts or transcription of recorded speech, which can be used as a starting-point of linguistic description or as means of verifying hypothesis about language (Meyer, 2002).

Lemmas: A head word and some of its list inflected and reduced forms (n't), ('s), ('re), ('ll), ('ve) and ('d). The inflections consist of plural, third person singular person, singular present tense, past tense, past participle, -ing, comparative, superlative and possessive (Bauer and Nation, 1993).

Other words: Words that are not appear in the GSL and the AWL

Text coverage: The inclusion of the number of running words in a text or corpus that is contained or covered by a specific word list, showed as a percentage of the total tokens of the text.

Tokens: The running words of the text. In other words, it is the number of whole words encountered in a text. Every word form is counted even if the same word form occurs more than once (Jackson and Amvela, 2000).

Word family: Groups of words that are sufficiently closely related to each other to form a 'family'. Plural, third person singular present tense, past tense, past participle, -ing, comparative, superlative, possessive and affixes (-able, -ible, -r, -er, -ic, -ish, -less, -ly, -th, -ness, -y, -al, -ation, -ess,ful, -ism, -ist, -ty, -ize, -ment,in-, non-, and un-). Each of word family is bonded by a common root word, although the resultant connections of meaning are also an important bonding feature. For example, *educate, educated, educatee education, educational, educationist, educator and educative* are all regarded as members of the same word family (<http://www.phon.ucl.ac.uk/home/dick/tta/wf/wf.htm>).

Word types: The different word occurring in a text. A file including one million running words might have 50,000 different types. The sentence '*It is not easy to say it correctly*' has seven word types, since '*It*' occurs twice (Jackson and Amvela, 2000).

CHAPTER II

LITERATURE REVIEW

In order to investigate the basic vocabulary input in Engineering courses and clarify theoretical perspectives in relation to the present study, this section is divided into four main parts. Part one is concerned with group of vocabulary. Part two deals with significance of word frequency with examples of well-known word lists. Part three explains meaning of corpus and concordance software including its importance. The last part reviews the related previous study on the analysis of corpora.

Groups of Vocabulary

Nation (1990) sorted out words according to their frequency of occurrence in reading texts into four main groups: high frequency words, academic words, technical words, and low frequency words. The main purpose of words classification is to pave the way for planning teaching and learning. Different groups of vocabulary require different teaching and learning strategies (Nation and Hwang, 1995).

High frequency words are the words in Michael West's General Service List which contains 2,000 word families (West, 1953). These words should receive attention first because without these it is not possible to use English in a normal way. High frequency words are worth spending time on since they are met over and over in reading. Teachers may deal with these words by pre-teaching them, putting the unknown words in an exercise after the text, or spending time looking at the range of their meanings. Clearly, this group of words is very useful and important for learners of English (Waring, 2001).

Academic words refer to specialized vocabulary for second language learners who intend to do academic study in English. The best example of a list of such words is the Academic Word List (Coxhead, 1998), which consists of 570 word families that are not in the most frequent 2,000 words of English but which occur reasonably

frequently over a wide range of academic texts. These are not technical words but rather normal vocabulary.

Technical words are words that will be particularly common and useful for a specific area of knowledge. Within a certain topic or subject area they may occur several times, but they are unlikely to occur in texts outside that subject area. For example, technical words in scientific English are words whose meaning requires scientific knowledge. Technical words are best taught within the content area of the relevant subject. Usually, they are not an appropriate focus in introductory English classes.

Low frequency words are defined as words that occur very infrequently and have a very small coverage of any text. This kind of word does not deserve attention and it is better not to spend class time with them. However, teachers should teach strategies for dealing with and learning these words, like guessing their meanings from context, using word parts to get word meanings, and using a dictionary. Or else, it is better to give a brief definition of the words or to do nothing at all about the word.

Significance of Word Frequency

However, in order to assist the students to gain knowledge effectively from various textbooks written in English, teachers need to address what aspects of lexical knowledge should be selected, in what order, and how this knowledge should be best presented (Nation and Newton, 1993). There are two strong reasons why vocabulary component of a language course need to be carefully planned. Initially, as different vocabulary provides greatly different returns for learning, it is significant to verify that the learners have a good control of high frequency words of the language before they move on to the low frequency ones. Likewise, the focus of teaching high frequency words is distinct from the focus of teaching low frequency vocabulary. For high frequency words, teacher and learners should focus on not only the words themselves, such as their meanings, collocations, grammatical categories but teachers and learners should also concentrate on the vocabulary learning strategies for low

frequency words (Nation, 2001; Waring, 2001). An ideal language program should thus focus on the appropriate level of vocabulary for the learners. Secondly, vocabulary learning opportunities and the quality of vocabulary learning can be vastly enhanced through the careful design of both vocabulary and other skill activities.

Most language research on which vocabularies enable the learners to gain the best advantages for their learning has suggested that frequency counts, or lists of the most frequent and widely used words, give enormously valuable information. That is, word frequency has a great impact on syllabus and materials design. It is because learners will benefit if they know those most frequently occurring words. This point of view is maintained by Worthington and Nation (1996). They point out that well planned courses must provide opportunities for several meetings with important vocabulary or high frequency words. This is because the more common and frequent words that are in the materials, the easier the reading will be. Cobb (2000) affirms that frequency information can ensure that learners acquire the best return for their vocabulary learning endeavor, and that it has contributed to acquisition. Vocabulary frequency becomes a key influence for learners' comprehension because they can recognize and use words with confidence if they meet the words again (Hunt and Beglar, 1998).

Word Frequency Lists

Word frequency can be of use to teachers in interpreting the importance and relevance of vocabulary items. This means that course designers should have word frequency lists to refer to when they consider the vocabulary component of a language course, and teachers need to have reference lists to judge whether a particular word deserves attention or not, and whether a text is suitable for a class. The main issue in materials development is deciding what words language learners should learn. As one way to solve this problem, Hatch and Brown (1995) suggest textbook writers adopt basic vocabulary lists from some source books such as the Thorndike and Lorge list (1944), West's General Service List (1953), or some more up-to-date lists based on

frequency. However, the benefit of each word list is different depending on the aim of the inventor. The following are some well-known word lists.

Thorndike and Lorge's List (1944) tells us how often each word occurred in one million running words of text and gives us some indication of its range. The range of a word is a measure of the number of different types of texts in which a word occurs. A word with a wide range occurs in many different kinds of texts and fields of study. The most useful words for learners are high frequency words which have a wide range.

The Brown Corpus is approximately one million words in length of edited written American English. The compilation was undertaken in 1961. The corpus was divided into 2000-word samples from different genres such as press reportage, fiction, government documents.

The University Word List (UWL) is a list of the most common 836 words not in the General Service List but which occur frequently over a number of academic texts first constructed by Xue and Nation in 1984. The UWL is a list of high-frequency words created for learners of English for Academic Purposes (EAP). It is categorized into 11 levels. The level one has the greatest frequency and range, level two next, and so on. Nation (1990) estimates that the words on this list account for 8 % of the words in a typical academic text.

The Bank of English was initiated in 1991 by Collins, a UK publisher, and the University of Birmingham. It comprises of 415 million words of speech and writing. A variety of potential uses are given in the corpus. It is designed primarily to aid in the creation of dictionaries. Sections of the corpus were employed as the basis of the BBC English Dictionary. In addition, it is used as a basis for a more general purpose dictionary such as the Collins COBUILD English Dictionary and a scope of other dictionaries.

The British National Corpus is a 100 million-word corpus of modern British English, both written and spoken, including everyday conversations. It was compiled by a consortium of British publishers, and academic institutions such as Oxford University Computing Services, Lancaster University's Centre for Computer Research on the English language, and the British Library.

However, over many word lists available, two word lists which have an important role in the courses design for the teachers and provide basic and essential lexical items for learners are the General Service List and the Academic Word List. According to Nation and Waring (1997), it is advisable that EAP/ESP students should learn the list of 2,000-word families from the General Service List (GSL) and the 570-word family Academic Word List (AWL).

The General Service List (GSL)

The most frequent 2,000 words listed by Michael West were first published in 1953. The GSL is based on a five million word of English. Each word in the list is accompanied by its inflected forms together with a list of common derivatives and compounds and with the frequency and percentage of each major meaning of each word indicated. The teachers should teach these words to learners just acquiring knowledge of the vocabulary for the first time. An example headword is:

| | | |
|---------------------|----------------------------|-----|
| ABLE , adj. | (1) Able to take care of | 89% |
| | (2) An able man | 11% |
| | [Able-bodied, 0.1%] | |
| ability , n. | (1) (<i>cleverness</i>) | |
| | A man of great ability | |
| | Musical ability | 58% |
| | (2) (<i>power to</i>) | |
| | Ability to learn | 40% |
| | [<i>legal sense</i> , 2%] | |

(GSL, p. 1)

The GSL has become the vocabulary basis of material for learners of English as a second language. A lot of teaching material, including graded readers, has been produced using this list. In spite of its age, some errors, and its solely written base, the GSL not only provides information on frequency for words in the list but also percentage of each major meaning within a word occurring in texts (West, 1953). Typically the coverage of the GSL is around 75% of the running words in non-fiction texts and around 90% of the running words in fiction. The GSL is not only based on frequency of occurrence, but also semantic. Presently, the GSL can be found only on the Internet as there is no version of the GSL in print.

An updated version of the GSL was published by John Bauman and Brent Culligan in 1995 (See Appendix B). This list contains 2,284 words [2,000 headwords from the original General Service List of West, plus 284 more, ranked and presented in frequency order based on the Brown Corpus (Francis and Kucera, 1982)].

The Academic Word List (AWL)

The list was published in 1998 by Averil Coxhead, of Victoria University of Wellington, New Zealand. It contains approximately 3,500,000 running words of written academic text. The list was developed in response to the needs of learners preparing for academic study and their teachers for well-principled, corpus-based study to determine which academic vocabulary items frequently occur and in academic text apart from the words in the General Service List of English Words (GSL). It is also a useful replacement for the University Word List (UWL). The AWL is shorter than the UWL. The corpus comprises 28 subject areas organized into 7 general areas in four disciplines: arts, commerce, law, and science. Both range and frequency were used in choosing words for the list. The list provides more coverage of academic texts than the UWL. The list is divided into ten sub-lists. Sublist 1 contains the most common words in the AWL. Sublist 2 contains the next most common words, and so on. There are 60 families in each sublist, except for sublist 10 which has 30 ones. An example is:

Sublist 1 of the Academic Word List

analyze, approach, area, assess, assume, authority, available, benefit, concept, consist, constitute, context, contract, create, data, define, derive, distribute, economy, environment, establish, estimate, evident, export, factor, finance, formula, function, identify, income, indicate, individual, interpret, involve, issue, labor, legal, legislate, major, method, occur, percent, period, policy, principle, proceed, process, require, research, respond, role, section, sector, significant, similar, source, specific, structure, theory, and vary (Coxhead, 1998)

The AWL can be very helpful in establishing goals in the English courses for academic purposes. Today, there are many tests based on the AWL that can be used to evaluate if learners know academic words or if the students are taught these words. In brief, the academic word in many course books were specifically designed bases on the AWL (Coxhead, 2000).

In order to create a useful list of vocabulary, however, it requires a linguistic tool or medium that can gain authentic information on language. Therefore, the following section will explain corpus or corpora (plural) as one of the most crucial developments in vocabulary studies at the present time.

A Corpus Study

A corpus is defined by various sources. Sinclair (1991: 14) defines a corpus as “a collection of naturally-occurring language text, chosen to characterize a state or variety of a language”. Hunston (2002: 2) defines a corpus as a “collection of naturally occurring examples of language, consisting of anything from a few sentences to a set of written texts or tape recordings, which have been collected for linguistic study”. In conclusion, a corpus is considered as a collection of written texts or transcription of spoken language words that is used to study a language.

A corpus is generally utilized to analyze language use. Many researchers have employed a corpus to count categories or record phenomena that have not been observed before. Besides this, it can be used to investigate ways in which similar structures occur in different contexts and serve different functions (Biber. *et al*, 1998 and Hunston, 2002). Corpus linguistic is concerned primarily with the description and explanation of the nature, structure and the use of languages (Kennedy, 1998). A corpus based approach is made up of grammatical descriptions which are based on the patterns of structure and use. These descriptions are found in a large collection of spoken, written, and electronic texts and are searchable by computer (Biber *et al*, 1998).

There are two kinds of corpora that are studied: the reference corpus and the learner corpus. A reference corpus is necessary for making generalizations or drawing examples of native speakers' language behaviors. There are two sections in this category. Firstly, a general corpus is a corpus of both spoken and written texts with balanced mixture of styles and genres. Another is a collection of texts that is relevant to one particular interest or discipline. A learner corpus is a collection of samples of learners' work for diagnostic purposes such as error analysis. This kind of corpus is increasingly being used in research projects (Shei, 1999).

Principled Collection of a Corpus Analysis

According to Kaewphanngam, Broughton, and Soranataporn (2002), the corpus design is one of the most essential components in using a corpus analysis. No exact formula for corpus design is identified. However, the corpus should be collected from language input which represents the analyzed language as a whole. There are two main principled collections of corpus design: size and representation.

1. *Size*. Fox (1998 cited in Tomlinson, 2003: 409) states that "a corpus is nothing more or less than a collection of texts input onto a computer, and the number of texts will depend on the uses that will be made of the corpus." The size of a corpus must be large enough to fairly represent the vocabulary occurrence within a language

and can consist of millions of words, especially analyzing collocations. One investigation found that 1000-word samples of ten different texts, such as general fictions or newspaper reportage, resulted in reliable counts of common grammatical features. However, studies of less common features and of lexical items require much larger corpora (Biber, 1990). A size of about 100,000 is also acceptable in the case of specialized corpus (Kaewphanngam, Broughton and Soranataporn, 2002). A large corpus is essential for developing references but a small corpus is better for training students to use corpora in the classroom (Aston, 1997). Norri and Kyoto (1996 cited in Meyer, 2000: 154) used scientific writing and different types of scientific writing written at varying levels of technicality for their sampling frame. It was not possible to include all examples of published social science writing, so they defined a year so as to narrow the size of their corpus. Moreover, researchers must be aware of logistic factors such as time, budget, and manpower when determining the size of the corpus.

2. *Representation.* The second important principle in the corpus design is the diversity of the corpus or the appropriateness of the varieties that are represented. It is not easy to be confident that a sample of texts is representative of all-possible genres or subject field or topic. Kennedy (1998) suggests that an appropriately selected corpus can be generalized to the language as a whole or specific part of it. Coxhead (2000) explains that a variety of short texts allow for variation in vocabulary occurrence and the variety of writers helps reduce the bias of the idiosyncratic language style among each writer. Hence, texts written by various writers should be used in a corpus analysis in order to generate validity of data.

Apart from that, Kalton (1983 cited in Mayer, 2002: 41) gives two general types of sampling methods used to select texts for a corpus. These are probability sampling and non- probability sampling.

a) *Probability sampling:* Researchers should carefully pre-select the population to sample. Using statistical formulas and other demographic information can ensure that the number and type of people being surveyed are truly representative of the population

b) *Non-probability sampling*: Researchers are not careful in the pre-selection process of samples but they can select the population to be surveyed through three process: Firstly, the sampling can employ haphazard, convenience, or accidental sampling, that is, a corpus can include texts that are available and easy to find. Next, the sampling can employ judgment, purposive, or expert choice sampling. In this case, one decides early who would be best qualified to be sampled, for instance, native versus non-native speakers of a language and educated versus non-educated speakers of a language. Lastly, the sampling can employ quota sampling in which certain percentages of populations are sampled. The selected texts can be representative of the whole texts by proportionally representing a percentage of the exact population.

Benefits of Corpus Studies

The corpus is a basic tool that is used for any kinds of research on language. Corpus linguists make use of a corpus as a collection of naturally texts that is useful in their language research, pedagogy and translation. McEnery and Wilson (2004) present four principle advantages for using corpus data as follows:

1) *Sampling and quantification*: As a corpus is a sampled to maximally represent the population, any findings gained from the corpus can be generalized to larger population. Consequently, quantification in corpus linguistics is more meaningful than other forms of linguistic quantification since it can tell us about a variety of language, not just that what is being analyzed.

2) *Ease of access*: As all the data collection has been dealt with by someone else, the research does not have to go through the issues of sampling, collection and encoding. The majority of corpora are readily available, either free or at low-cost price. Once the corpora have been obtained, it is usually easy to access the data by using a concordance program.

3) *Enriched data*: Many corpora have already been enriched with additional linguistic information such as part-of-speech annotation, parsing and prosodic

transcription. Thus data retrieval from annotated corpora can be easier and more specific than with unannotated data.

4) *Naturalistic data*: Corpus data is not always completely unmonitored in the sense that people producing the spoken or written texts are unaware until after the fact that they are being asked to participate in the building of a corpus. However, for the most part, the data are largely naturalistic, unmonitored and the product of real social contexts. The corpus thus provides one of the most reliable sources of naturally occurring data that can be examined.

Concordance Software

In early corpus linguistics, researchers had to be dependent on humans to collect and analyze the data (McEnery and Wilson, 2004). Today, a computer with a concordancing software tool has been designed to assist researchers to analyze how a text has been put together. Sinclair (1991) states that using computers for processing natural language texts greatly enhance the quality of a corpus.

Concordance software provides access to any electronic text such as a text available on the computer, CD-ROM, database, and the Internet and can be used to investigate the occurrence of particular words or structures or combination of words and so on. Additionally, it can count and categorize words in high speed, and this is the strength of electronic textual analysis (Higgins, 1991 and Allan, 1999). There are a variety of concordance programs which are selected for text analysis as follows:

Longman Miniconcordancer (LMC): The tool is used to produce frequency lists of words and punctuation and generates a key-word-in-context concordance. However, its ability is limited by the capacity to size of files that the program can process. A program with such limited capacity will not be of interest to serious scholar and researches. Nevertheless, those who want to examine only short texts might find useful (Johnson, 1992).

Micro-concord: It is a simple interactive software showing (keyword-in-context) that runs under a variety of configurations on the Spectrum home microcomputer. Based on the proposition that computer assisting language learning should, it involve making the computer a sort of surrogate teacher or trainer. Moreover, it offers both language learners and language teachers a research tool for investigating “the company that words keeps” that has usually been available only on mainframe computers to academic researchers in such fields as computational linguistics, lexicography, and stylistics (John, 1986).

WordSmith Tools: It is a collection of corpus linguistics tools for looking for patterns in a language which developed from concordancer “*Micro Concord*”. The tools include a concordancer, word-listing facilities, a tool for computing the keywords of a text or genre, and a series of other utilities, e.g. to convert text files from one format to another or to make multiple changes in many text files, to examine the format of text files, to download texts from the web and so on (Scott, 2010).

Previous Researches

Over the past decade, developments in the new technology of computer corpus linguistics, and the availability of gigantic collections of text in electronic form from written sources, had made possible new insights into how words are distributed in a language. According to Kennedy (1992), the researchers are allowed to examine more deeply the nature of collocations and to reconceptualize the nature of vocabulary to language description and pedagogy by the emergence of sophisticated corpus analysis.

Gledgehill (2000) conducted a corpus in 150 cancer research articles to examine the phraseology appearing in introduction. The research revealed that the fixedness and particular characteristic of scientific phraseology depending on discourse processes such as reformulation. The sub-program named The Keyword Computer in WordSmith Tool was selected to make a comparison of the frequency word lists from the corpus by giving a list of frequent words that appeared frequently

in one section than in the remaining part of the corpus. This enables a principled approach to make a decision on which grammatical items are analyzed.

Flowerdew (2003) conducted a study of the similarities and differences between professional and nonprofessional writing in the pattern of the problem-solution, and a frequent rhetorical pattern of technical academic writing. 80 and 60 recommendation reports written by undergraduate students and experts respectively were consisted in a corpus. Each corpus comprised approximately 250,000 words. The research employed the WordSmith Tool to explore key words that automatically provide linguistic evidence for the problem-solution pattern.

Meyer (2002) studied the modals on two corpora totaling 1,725,000 words: the Lancaster corpus and sections of the London Corpus containing speech, letter, and diaries. It was found that there was a more frequent occurrence of modals in speech than in writing. The study also found that *will*, *can* and *would* were the most frequently occurring modals in speech, and that *will* and *would* were the most frequent modals in writing. Certain modals tended to occur most frequently in one medium rather than the other: *may* in writing more often than speech; *shall* more often in speech than writing.

In Thailand, several researches were conducted on corpus analysis. Most of them paid attention on word lists which learners should know in order to understand the English text in their field of study. Wongchalard (1976), for instance, did a research on comparison and English vocabulary in “university chemistry” written by Bruce H. Mahan with English vocabulary in West’s (1953) “A General Service List of English” for the secondary school level. The Wordlist tool in WordSmith was used to investigate and compare new words in the study. It was found that the new general English vocabulary was 1,333 items. In regard to these new words, there are only a few (23.10 percent or 308 words) that are practical to the non-native learners who study English as a second language. The researcher also noted that nearly a half (49.73 percent or 663 words) of these new words is created by prefixing and suffixing.

Kaewphanngam, Brouhton, and Soranasataporn (2002) studied the specialized vocabulary used in psychology texts to meet the need of non-native graduated students majoring in Psychology at the Department of Psychology and Guidance, Faculty of Education at Silpakorn University. The researchers employed WordSmith Tool to examine both context and specialized lexical items in the study. The corpus included three sub-fields of psychology which are Counseling Psychology, Education Psychology and Social Psychology respectively. The comparison between the content words in a general corpus and the specialized corpus were conducted in the study. The results presented a high variation in the content words in the psychology corpus and the General Service List (GSL). These findings suggested the need to produce field-specific word lists which incorporate all frequent specific lexical items necessary for the expression of the rhetoric of the specific subject areas.

Poonpon (2002) constructed a corpus of the vocabulary input of English language class material for the first the second year of science students from Mahidol university and Khon Kean university in the academic years 2001-2002. The qualitative research was applied to rely on determination of English vocabulary that science students studied at the first three levels. Moreover, WordSmith tool was used to analyze vocabulary input of course materials in both universities. The size of the corpus included 317,673 words of vocabulary input. The results presented that words included in West's word list (1953) covered the majority (80%) of all corpora and occurred most often in teaching and learning materials. This study showed that English vocabulary input in both intensive and extensive subject materials in both Science courses at Mahidol University and Khon Kean University emphasized words occurring in high frequency. The research also noted that vocabularies appearing in English courses for first year are beneficial for English courses of second year science students because the items in former courses can be used as a fundamental knowledge.

From the previous studies mentioned above, it is obvious that a corpus analysis provides great benefit to linguistic development. The researcher can utilize the corpus analysis approach to study language patterns in different aspects such as to

examine and analyze usage of vocabulary and phraseology in a mixture of genres and so on. It is found that, therefore, corpus analysis has played an important role in developing course materials for non-native English learners as the outputs of these studies have been analyzed from authentic example of language in use, both spoken and written language (Allan, 1999). As a result, corpus analysis becomes one of the most essential tools in examining and evaluating a quality of teaching materials in the classroom for non-native speakers, in order to find out the development gap of the materials, as well as to establish a model of English course materials designed for specific purposes such as psychology and science. However, there are very few studies that focus on English for Engineering courses. This study aims to explore intensive English textbooks for Engineering courses in vocabulary appearing in intensive English for Engineering courses, based on the GSL and the AWL, in order to find out the most frequent vocabulary items and text coverage of general service words and academic words.

CHAPTER III

RESEARCH METHODOLOGY

The research procedures of the study were explained in this chapter. The first was about samples, data collection and data analysis and the last part was about the verification of this research study.

Samples

The samples used in this study were course materials or textbooks used in the course “English for Engineering” The course materials were taken from the universities which have the Engineering program in undergraduate level. They used that course materials for their Engineering students 2009-2010. The samples of English textbooks were as follows.

Textbooks from Thammasart University (TU)

Textbooks from Rangsit University (RSU)

Textbook from Rajamangala University of Technology (RMUT)

Data Collection Procedure

For the research, in order to gain data from intensive English course materials specifically used by Engineering students, three steps were involved. Firstly, textbooks from a variety of universities including private and public universities in academic year 2009-2010 were collected to be analyzed. All those materials were written by various writers. Assorted textbooks from several writers were used in order to generate the validity of findings. Lastly, the total number of running words or words encountered in texts used in the study was about 100,000 words. According to Kaewphanngam, Broughton, and Soranataporn (2003) the size of 100,000 words is acceptable in the case of specific corpus.

Data Analysis

The textbooks and materials used in the course of English for Engineering students were collected. The analysis of these texts was carried out as follows. Firstly, all course materials were scanned and stored as plain-text files (*.txt). At the scanning stage, the ORC software was used. The ORC is a freeware document scanning software that allows users with scanner or printer to scan the document and automatically get the content typed out in editable format. The software also read all texts and represented the text electronically. After materials were scanned, the collection of the texts of each university was saved in the file separately and named. They are TU for textbooks from Thammasart University, RSU for Rangsit University and RMUT for Rajamangala. Each text file was then exported into Microsoft Word 2007 as a Word document (*.doc) and the spelling of all words in the text was checked by using the spelling-checker.

In order to examine the frequency of words and count the running words (every word occurring in a text), the Wordlist tool which is the subprogram in WordSmith was used. The Wordlist arranged words in both frequency order and alphabetical order. After word was counted and its frequency was indicated, entries were then grouped into the same lemma by using the Lemmatization which is another subprogram. It is not only used to lemmatize a group of words in the same lemma but also form a word family in WordSmith. At this stage, the Lemmatization lemmatized a group of words of the same lemma. For instance, the words *kills*, *killing* and *killed* were lemmatized as a member of the lemma “*kill*” by typing *s, *ing and *ed one at a time, as the search string in the program. Since a lemma consists of a head word and some of its inflected and reduced forms, the search strings used in this process include *s and *es for plural and third person singular present tense, *d and *ed for past tense and past participle, *ing for present participle, *er for comparative and *ll, *ve, *re, *’n’t, *’s for reduced form. In addition, variant spellings such as *tire* and *tyre* were included as part of the same lemma.

After gaining the lemmatized list, the researcher copied and explored it to a blank file in Word (*.doc) and the numbers of lemmas were counted at this stage. In order to compare the word list gained from process mentioned above with the GSL and the AWL, the lemmatized list was gathered under the same word families since the GSL and the AWL were created on a basis of word families. The auto-joining menu or the Wordlist tool was needed again in order to formulate a family list. For instance, to place the words, *communicate*, *communicative* and *communication* into the same headword “*commune*” the search string *ate, *ive and *ion were typed one at a time.

After the list was changed into the family list, three groups were created: GSL words, AWL words, and the ‘Others’ words. As for the GSL, the revised version of the GSL list (Bauman and Culligan, 1995) was downloaded from the website <http://www.auburn.edu/jiangna?eng16240?slistgen.htm>. and saved as a text file in order to be used to compare with general service words of the study. The GSL then was alphabetized using the Wordlist program. After that, the program showed both frequency and alphabetical list from the text file, and the GSL was saved as word list. The alphabetical list was copied, exported into a Word document, and saved as a text file. So, the GLS list was demonstrated in alphabetical order (See Appendix B) and ready to be used.

In the same way the AWL list was acquired from the website <http://www.vuw.ac.nz/lals/divl/aw/>. The list of headwords was downloaded as text. It was in alphabetical order and the number representing the sublist of each academic word was indicated in the same line. The headwords or base words of the 570 families in the AWL were contained in the list. The list then was saved as a text file (See Appendix C).

To avoid complication, the GSL, the AWL and word families from the former analysis were prepared on the screen of Word version 2007 at the same time. At this stage, isolated words in the word list were grouped one at a time. For example, the word “*take*” was in the GSL list, it was shifted into the GSL column. The word

“*significant*” was in the AWL, it had to be in the AWL column. Words that were not counted as GSL or AWL lists were accounted for words in ‘Other’ group. After finishing the classifying procedure, the researcher had to ensure the list again in order to check if each group was done correctly. After that, word families and their frequency in each column were computed and their total was calculated. Lastly, the percentage of word group was calculated by using following formula:

$$\text{Coverage by a word group (\%)} = \frac{\text{the total number of running words in each group} \times 100}{\text{the total number of running words in the corpus}}$$

In the same way, individual text file was handled as process mentioned above.

Verification of the Research

For the validity of research findings, the analysis of the data was verified by scanning process at the first time of gaining data from materials since it was much more reliable and accurate than typing. Furthermore, lexical analysis program was used to examine data in order to eliminate the error of the data analysis which may be caused by manpower. In addition, the materials from various writers were also chosen to create generalization of data.

CHAPTER IV

RESULTS

Results

This chapter contains the results of the analysis of English vocabulary input in textbooks used in course materials of English for Engineering students from both open universities (private and government universities) and closed universities which incorporate Faculty of Engineering into the syllabi and provide students with English for Engineering courses in the 2009-2010 academic year.

Before the analysis of each corpus, the researcher decided that five word families which were found occurring in both the GSL and the AWL (*framework, mechanism, medical, network, and partner*) should be allocated to the GSL. The reason for this is that words in the GSL should be the first priority for learners to know (Cobb, 2000). In addition, some words in 'Other' list are proper noun, e.g. names of people and countries which cannot be grouped into word families as GSL and AWL words. As a result, the researcher decided to use the symbol (?) instead.

The five corpora in the study differed in the number of words families, their frequency and their coverage. The size and vocabulary content of each corpus are shown in Table 1.

Table 1 Size and Vocabulary Content of Studied Texts

| Corpus | Tokens | Types | Families |
|-----------|--------|-------|----------|
| TU* | 28,299 | 4,145 | 1,588 |
| TU1** | 18,642 | 3,387 | 1,314 |
| RSU*** | 39,298 | 4,079 | 1,461 |
| RSU1**** | 38,374 | 4,588 | 1,574 |
| RMUT***** | 7,606 | 1,598 | 798 |

Note: *TU stands for textbook used in the first academic year of Thammasart

University.

**TU1 stands for textbook used in the second academic year of Thammasart

University.

***RSU stands for textbook used in the first academic year of Rangsit

University.

****RSU1 stands for textbook used in the second academic year of Rangsit

University.

*****RMUT stands for textbook of Rajamangala University of Technology

University.

Table 1 shows that each corpus in the study varied in length. That is, RSU and RSU1 were the largest with 39,298 and 38,374 running words respectively, while the smallest size of corpus in the analysis was RMUT which contain only 7,606 tokens. With respect to a lexical analysis, it is obvious that every corpus decreased in the number of words when tokens were grouped into word types and families. For example, the TU corpus containing 28,299 running words was found to have 4,145 words types, as the repeated words were counted as one word. Then, word types were further grouped into 1,588 word families, as sufficiently related words were considered as a family.

An Analysis of English for Engineering Classroom Material Used by Thammasart University Students, First Year (TU Corpus)

Table 2 Word Families, Frequency and Coverage in TU Corpus

| Words Groups | Word Families | Word Occurrences | Coverage |
|---------------------|----------------------|-------------------------|-----------------|
| GSL | 1,266 | 23,571 | 83.29% |
| AWL | 322 | 1,961 | 6.93% |
| Other | ? | 2,767 | 9.78% |
| Total | 1,588+? | 28,299 | 100% |

Table 2 shows that TU corpus was mostly covered by word families from the GSL as GSL words accounted for 83.29 % of the whole words or tokens in this corpus. Besides, it was discovered that 6.93% of the TU corpus were words from the AWL. That is, 322 AWL word families appeared to have 1,961 occurrences. In addition, words in the 'Other' group had a greater coverage than AWL.

Table 3 The Commonly Occurring AWL Words with Their Frequencies in TU Corpus

| | Word Families | Occurrences | Word Families | Occurrences | |
|-----|----------------------|--------------------|----------------------|--------------------|----|
| 1. | academy | 3 | 24. | assist | 2 |
| 2. | access | 2 | 25. | assume | 1 |
| 3. | accommodate | 1 | 26. | attach | 1 |
| 4. | accumulate | 1 | 27. | author | 1 |
| 5. | accurate | 9 | 28. | available | 6 |
| 6. | achieve | 1 | 29. | aware | 5 |
| 7. | adapt | 6 | 30. | benefit | 6 |
| 8. | adjacent | 1 | 31. | bond | 4 |
| 9. | adjust | 1 | 32. | brief | 2 |
| 10. | affect | 2 | 33. | bulk | 3 |
| 11. | aid | 3 | 34. | capable | 4 |
| 12. | alter | 3 | 35. | capacity | 10 |
| 13. | alternative | 3 | 36. | category | 4 |
| 14. | analyze | 7 | 37. | challenge | 2 |
| 15. | annual | 1 | 38. | channel | 2 |
| 16. | anticipate | 1 | 39. | chapter | 1 |
| 17. | append | 2 | 40. | chart | 32 |
| 18. | approach | 7 | 41. | chemical | 42 |
| 19. | appropriate | 11 | 42. | civil | 4 |
| 20. | approximate | 3 | 43. | clarify | 3 |
| 21. | area | 15 | 44. | clause | 27 |
| 22. | aspect | 3 | 45. | code | 1 |
| 23. | assemble | 8 | 46. | coincide | 3 |

Table 3 (Continued)

| Word Families | Occurrences | Word Families | Occurrences |
|----------------------|--------------------|----------------------|--------------------|
| 47. collapse | 1 | 76. convince | 1 |
| 48. colleague | 3 | 77. cooperate | 2 |
| 49. comment | 3 | 78. coordinate | 5 |
| 50. communicate | 39 | 79. create | 16 |
| 51. community | 1 | 80. credit | 3 |
| 52. compensate | 1 | 81. criteria | 1 |
| 53. complex | 3 | 82. cycle | 6 |
| 54. component | 14 | 83. data | 11 |
| 55. comprehensive | 1 | 84. decade | 1 |
| 56. comprise | 2 | 85. decline | 1 |
| 57. compute | 27 | 86. define | 3 |
| 58. concentrate | 5 | 87. definite | 1 |
| 59. concept | 2 | 88. denote | 1 |
| 60. conclude | 2 | 89. depress | 1 |
| 61. conduct | 10 | 90. derive | 15 |
| 62. confirm | 1 | 91. design | 59 |
| 63. consequent | 6 | 92. despite | 3 |
| 64. consist | 6 | 93. detect | 1 |
| 65. constitute | 2 | 94. device | 4 |
| 66. construct | 6 | 95. dimension | 37 |
| 67. consult | 1 | 96. displace | 1 |
| 68. consume | 6 | 97. display | 3 |
| 69. contact | 1 | 98. dispose | 11 |
| 70. context | 14 | 99. distinct | 5 |
| 71. contract | 1 | 100. distribute | 1 |
| 72. contrast | 17 | 101. document | 3 |
| 73. contribute | 1 | 102. draft | 4 |
| 74. convene | 2 | 103. drama | 2 |
| 75. convert | 2 | 104. dynamic | 2 |

Table 3 (Continued)

| Word Families | Occurrences | Word Families | Occurrences |
|----------------------|--------------------|----------------------|--------------------|
| 105. economy | 9 | 134. federal | 2 |
| 106. edit | 1 | 135. file | 4 |
| 107. element | 15 | 136. final | 12 |
| 108. eliminate | 3 | 137. finance | 15 |
| 109. emphasis | 9 | 138. flexible | 9 |
| 110. enable | 1 | 139. fluctuate | 1 |
| 111. encounter | 3 | 140. focus | 44 |
| 112. energy | 8 | 141. formula | 1 |
| 113. enhance | 2 | 142. found | 1 |
| 114. ensure | 3 | 143. framework | 1 |
| 115. environment | 31 | 144. function | 2 |
| 116. equate | 2 | 145. generation | 1 |
| 117. equip | 18 | 146. globe | 2 |
| 118. equivalent | 1 | 147. goal | 2 |
| 119. erode | 1 | 148. grade | 1 |
| 120. error | 1 | 149. grant | 1 |
| 121. establish | 1 | 150. guideline | 8 |
| 122. estimate | 4 | 151. hence | 3 |
| 123. evaluate | 1 | 152. hypothesis | 4 |
| 124. eventual | 1 | 153. identical | 1 |
| 125. exhibit | 1 | 154. identify | 6 |
| 126. expand | 2 | 155. illustrate | 15 |
| 127. export | 2 | 156. impact | 3 |
| 128. expose | 10 | 157. imply | 1 |
| 129. external | 3 | 158. impose | 1 |
| 130. extract | 6 | 159. incidence | 1 |
| 131. facilitate | 1 | 160. income | 1 |
| 132. factor | 1 | 161. indicate | 6 |
| 133. feature | 4 | 162. individual | 4 |

Table 3 (Continued)

| Word Families | Occurrences | Word Families | Occurrences |
|----------------------|--------------------|----------------------|--------------------|
| 163. infer | 2 | 192. method | 11 |
| 164. injure | 17 | 193. military | 1 |
| 165. insert | 1 | 194. minimize | 2 |
| 166. inspect | 1 | 195. minor | 2 |
| 167. instruct | 50 | 196. mode | 7 |
| 168. intense | 1 | 197. modify | 4 |
| 169. interact | 1 | 198. mutual | 1 |
| 170. intermediate | 1 | 199. negate | 2 |
| 171. interpret | 1 | 200. network | 1 |
| 172. invest | 11 | 201. nevertheless | 7 |
| 173. investigate | 3 | 202. nonetheless | 1 |
| 174. involve | 26 | 203. normal | 2 |
| 175. isolate | 6 | 204. nuclear | 4 |
| 176. item | 9 | 205. obtain | 3 |
| 177. job | 24 | 206. obvious | 2 |
| 178. label | 7 | 207. occupy | 1 |
| 179. layer | 2 | 208. occur | 11 |
| 180. lecture | 1 | 209. output | 1 |
| 181. legal | 2 | 210. overall | 1 |
| 182. license | 2 | 211. overlap | 1 |
| 183. link | 8 | 212. panel | 2 |
| 184. locate | 2 | 213. paragraph | 42 |
| 185. maintain | 3 | 214. parallel | 2 |
| 186. major | 5 | 215. participate | 2 |
| 187. manual | 3 | 216. partner | 16 |
| 188. maximize | 4 | 217. passive | 20 |
| 189. mechanism | 2 | 218. perceive | 2 |
| 190. media | 13 | 219. percent | 17 |
| 191. mental | 2 | 220. period | 4 |

Table 3 (Continued)

| Word Families | Occurrences | Word Families | Occurrences |
|----------------------|--------------------|----------------------|--------------------|
| 221. phenomenon | 2 | 250. remove | 25 |
| 222. physical | 8 | 251. require | 31 |
| 223. plus | 26 | 252. research | 5 |
| 224. portion | 1 | 253. reside | 1 |
| 225. pose | 2 | 254. resource | 12 |
| 226. potential | 6 | 255. respond | 4 |
| 227. precise | 1 | 256. retain | 1 |
| 228. predict | 1 | 257. reveal | 2 |
| 229. previous | 1 | 258. reverse | 2 |
| 230. primary | 13 | 259. revolution | 7 |
| 231. prime | 1 | 260. role | 4 |
| 232. principal | 1 | 261. route | 5 |
| 233. principle | 1 | 262. section | 23 |
| 234. proceed | 10 | 263. sector | 2 |
| 235. process | 74 | 264. secure | 1 |
| 236. project | 10 | 265. seek | 3 |
| 237. proportion | 5 | 266. select | 6 |
| 238. purchase | 1 | 267. sequence | 7 |
| 239. random | 1 | 268. series | 3 |
| 240. range | 11 | 269. shift | 1 |
| 241. ratio | 4 | 270. significant | 7 |
| 242. react | 2 | 271. similar | 9 |
| 243. recover | 4 | 272. site | 3 |
| 244. refine | 7 | 273. somewhat | 2 |
| 245. register | 1 | 274. source | 22 |
| 246. regulate | 1 | 275. specific | 11 |
| 247. reinforce | 4 | 276. specify | 4 |
| 248. relax | 1 | 277. statistic | 3 |
| 249. release | 15 | 278. strategy | 1 |

Table 3 (Continued)

| Word Families | Occurrences | Word Families | Occurrences |
|----------------------|--------------------|----------------------|--------------------|
| 279. structure | 8 | 301. topic | 9 |
| 280. style | 1 | 302. transfer | 4 |
| 281. subordinate | 3 | 303. transit | 2 |
| 282. subsequent | 1 | 304. transmit | 4 |
| 283. sufficient | 4 | 305. transport | 3 |
| 284. sum | 11 | 306. trend | 5 |
| 285. summary | 5 | 307. trigger | 2 |
| 286. survive | 1 | 308. ultimate | 3 |
| 287. suspend | 1 | 309. undergo | 2 |
| 288. symbol | 34 | 310. undertake | 1 |
| 289. tape | 3 | 311. unify | 1 |
| 290. target | 3 | 312. unique | 2 |
| 291. task | 12 | 313. utilize | 1 |
| 292. team | 2 | 314. vary | 5 |
| 293. technical | 1 | 315. vehicle | 6 |
| 294. technique | 1 | 316. version | 1 |
| 295. technology | 10 | 317. via | 1 |
| 296. temporary | 1 | 318. vision | 1 |
| 297. tense | 9 | 319. visual | 4 |
| 298. text | 26 | 320. volume | 9 |
| 299. theory | 1 | 321. whereas | 3 |
| 300. thereby | 1 | | |

Table 3 shows that TU corpus was comprised of 379 AWL words families. Moreover, approximately fifty families were found occurring more than ten times in the corpus, e.g. approximate, area, capacity, chart, chemical, clause, community, compute, conduct and so on.

In regard to words in the 'Other' group, they accounted for almost 10 % of the TU corpus. The most commonly occurring 100 vocabulary items in TU corpus were presented in three sub-groups: Proper noun, Technical words, and Low Frequency words as shown in Table 4 below.

Table 4 The 100 Most Frequent Words from the 'Other' List in TU Corpus

| No. | Word Families | | | Occurrences |
|-----|---------------|-----------|---------------|-------------|
| | Proper | Technical | Low Frequency | |
| 1. | | mercury | | 56 |
| 2. | | | graph | 44 |
| 3. | | | recycle | 29 |
| 4. | | alloy | | 26 |
| 5. | | | vocabulary | 22 |
| 6. | | | conduct | 21 |
| 7. | | | cube | 21 |
| 8. | | | meter | 21 |
| 9. | | | expand | 19 |
| 10. | | | square | 19 |
| 11. | | | ductile | 18 |
| 12. | | | sketch | 16 |
| 13. | | | density | 15 |
| 14. | | | diagram | 14 |
| 15. | | | math | 13 |
| 16. | | | adverb | 12 |
| 17. | | | automobile | 12 |
| 18. | | | contaminate | 12 |
| 19. | | | parenthesis | 12 |
| 20. | | | toxic | 12 |
| 21. | | fiber | | 11 |

Table 4 (Continued)

| No. | Word Families | | | Occurrences |
|-----|---------------|-------------|---------------|-------------|
| | Proper | Technical | Low Frequency | |
| 22. | | | corrosion | 10 |
| 23. | | | engineer | 10 |
| 24. | | metal | | 10 |
| 25. | | aluminum | | 9 |
| 26. | | | compress | 9 |
| 27. | | | fatal | 9 |
| 28. | | fluorescent | | 9 |
| 29. | | | mold | 9 |
| 30. | | | paraphrase | 9 |
| 31. | | | phrase | 9 |
| 32. | | plastic | | 9 |
| 33. | | | pollute | 9 |
| 34. | | | transparent | 9 |
| 35. | | | adjective | 8 |
| 36. | Bob | | | 8 |
| 37. | | | brittle | 8 |
| 38. | | | cast | 8 |
| 39. | | | evacuate | 8 |
| 40. | Greek | | | 8 |
| 41. | | | liable | 8 |
| 42. | | | pulp | 8 |
| 43. | | | routine | 8 |
| 44. | | | tensile | 8 |
| 45. | | | tone | 8 |
| 46. | | | vapor | 8 |
| 47. | | acid | | 7 |
| 48. | | | budget | 7 |
| 49. | | | chronic | 7 |

Table 4 (Continued)

| No. | Word Families | | | Occurrences |
|-----|---------------|-----------|---------------|-------------|
| | Proper | Technical | Low Frequency | |
| 50. | | | classmate | 7 |
| 51. | | | drill | 7 |
| 52. | | | durable | 7 |
| 53. | | | gadget | 7 |
| 54. | | methyl | | 7 |
| 55. | | | withstand | 7 |
| 56. | | | alarm | 6 |
| 57. | | atom | | 6 |
| 58. | Bangkok | | | 6 |
| 59. | | | blank | 6 |
| 60. | | | bracket | 6 |
| 61. | | | coated | 6 |
| 62. | | | height | 6 |
| 63. | | hydrogen | | 6 |
| 64. | | | mug | 6 |
| 65. | | newton | | 6 |
| 66. | | | preposition | 6 |
| 67. | | | radian | 6 |
| 68. | | | reference | 6 |
| 69. | | software | | 6 |
| 70. | | | supervise | 6 |
| 71. | | | workplace | 6 |
| 72. | | | acceleration | 5 |
| 73. | | | affix | 5 |
| 74. | | carbon | | 5 |
| 75. | Carolyn | | | 5 |
| 76. | | | cash | 5 |

Table 4 (Continued)

| No. | Word Families | | | Occurrences |
|------|---------------|-----------|---------------|-------------|
| | Proper | Technical | Low Frequency | |
| 77. | China | | | 5 |
| 78. | | | comprehensive | 5 |
| 79. | | | dye | 5 |
| 80. | | | elevate | 5 |
| 81. | | | emergency | 5 |
| 82. | India | | | 5 |
| 83. | | insulate | | 5 |
| 84. | | | internet | 5 |
| 85. | Japan | | | 5 |
| 86. | | | kidney | 5 |
| 87. | | | mobile | 5 |
| 88. | | oxygen | | 5 |
| 89. | | | pie | 5 |
| 90. | | | setting | 5 |
| 91. | | | stainless | 5 |
| 92. | | | suffix | 5 |
| 93. | | | syllable | 5 |
| 94. | | | tackle | 5 |
| 95. | | | tank | 5 |
| 96. | Thai | | | 5 |
| 97. | | | worksheet | 5 |
| 98. | | zinc | | 5 |
| 99. | | | abbreviate | 4 |
| 100. | | | album | 4 |

Table 4 shows that the majority of the most commonly occurring 100 words from the ‘Other’ list are in the Low Frequency group. That is, three fourths of the corpus or seventy-five words belong to the Low Frequency word group. Technical words were also found in this group which accounted for seventeen words. Finally, words found in the Proper Noun list are names of people and countries.

An Analysis of English for Engineering Classroom Material Used by Thammasart University Students, Second Year (TU1 Corpus)

Table 5 Word Families, Frequency and Coverage in TU1 Corpus

| Words Groups | Word Families | Word Occurrences | Coverage |
|---------------------|----------------------|-------------------------|-----------------|
| GSL | 1,031 | 14,570 | 78.16% |
| AWL | 283 | 1,207 | 6.47% |
| Other | ? | 2,865 | 15.37% |
| Total | 1,314+? | 18,642 | 100% |

According to Table 5, GSL words accounted for 78.16% of the tokens in the TU1 corpus. Additionally, only 1,031 of total 2,284 GSL word families (See Appendix B) occurred while over 1,000 families were absent from this TU1 corpus. Nearly half (283) of the total AWL 570 words (See Appendix C) occurring in the corpus represented 6.47% of coverage. However, The TU1 corpus, served as English for engineering classroom material used by Thammasart university students in their second year, provided less coverage of GSL comparing to TU corpus. Regarding ‘Other’ group words, both TU and TU1 corpora are similar in the number of word occurrences. However, the coverage of vocabulary items in TU1 was higher than TU.

Table 6 The Commonly Occurring AWL Words with Their Frequencies in the TU1 Corpus

| | Word Families | Occurrences | Word Families | Occurrences | |
|-----|----------------------|--------------------|----------------------|--------------------|----|
| 1. | abstract | 2 | 29. | capacity | 3 |
| 2. | access | 2 | 30. | category | 2 |
| 3. | accompany | 1 | 31. | channel | 1 |
| 4. | achieve | 2 | 32. | chemical | 17 |
| 5. | acquire | 1 | 33. | civil | 2 |
| 6. | adjacent | 3 | 34. | clause | 4 |
| 7. | adjust | 2 | 35. | code | 1 |
| 8. | adult | 1 | 36. | coherent | 6 |
| 9. | affect | 2 | 37. | comment | 1 |
| 10. | alter | 3 | 38. | communicate | 1 |
| 11. | alternative | 1 | 39. | community | 1 |
| 12. | analyze | 1 | 40. | compatible | 1 |
| 13. | annual | 1 | 41. | compensate | 1 |
| 14. | approach | 2 | 42. | component | 28 |
| 15. | appropriate | 1 | 43. | compound | 7 |
| 16. | approximate | 2 | 44. | comprise | 1 |
| 17. | area | 12 | 45. | compute | 12 |
| 18. | aspect | 1 | 46. | concentrate | 1 |
| 19. | assemble | 4 | 47. | concept | 3 |
| 20. | assess | 2 | 48. | conduct | 1 |
| 21. | assign | 1 | 49. | confirm | 1 |
| 22. | attach | 3 | 50. | consequent | 2 |
| 23. | automate | 4 | 51. | considerable | 1 |
| 24. | available | 9 | 52. | consist | 12 |
| 25. | benefit | 1 | 53. | construct | 6 |
| 26. | bond | 7 | 54. | consult | 1 |
| 27. | brief | 6 | 55. | consume | 3 |
| 28. | capable | 4 | 56. | contact | 3 |

Table 6 (Continued)

| | Word Families | Occurrences | Word Families | Occurrences | |
|-----|----------------------|--------------------|----------------------|--------------------|----|
| 57. | context | 4 | 85. | domestic | 4 |
| 58. | contract | 3 | 86. | dominate | 1 |
| 59. | contrast | 3 | 87. | duration | 1 |
| 60. | contribute | 3 | 88. | economy | 4 |
| 61. | convene | 12 | 89. | element | 7 |
| 62. | convert | 17 | 90. | eliminate | 6 |
| 63. | convince | 1 | 91. | emphasis | 1 |
| 64. | coordinate | 1 | 92. | enable | 3 |
| 65. | core | 1 | 93. | encounter | 1 |
| 66. | credit | 1 | 94. | energy | 56 |
| 67. | criteria | 1 | 95. | ensure | 2 |
| 68. | cycle | 1 | 96. | environment | 8 |
| 69. | decade | 1 | 97. | equip | 19 |
| 70. | define | 10 | 98. | equivalent | 1 |
| 71. | definite | 1 | 99. | erode | 2 |
| 72. | demonstrate | 1 | 100. | establish | 1 |
| 73. | derive | 1 | 101. | estate | 1 |
| 74. | design | 27 | 102. | evaluate | 1 |
| 75. | detect | 14 | 103. | eventual | 1 |
| 76. | deviate | 1 | 104. | exceed | 1 |
| 77. | device | 14 | 105. | exclude | 4 |
| 78. | dimension | 2 | 106. | expand | 10 |
| 79. | discrete | 1 | 107. | export | 1 |
| 80. | discriminate | 8 | 108. | expose | 3 |
| 81. | display | 1 | 109. | external | 2 |
| 82. | distinct | 1 | 110. | extract | 1 |
| 83. | distribute | 5 | 111. | facilitate | 2 |
| 84. | document | 2 | 112. | factor | 1 |

Table 6 (Continued)

| Word Families | Occurrences | Word Families | Occurrences |
|----------------------|--------------------|----------------------|--------------------|
| 113. feature | 4 | 141. label | 4 |
| 114. final | 2 | 142. labor | 1 |
| 115. finite | 1 | 143. layer | 9 |
| 116. flexible | 5 | 144. lecture | 2 |
| 117. focus | 10 | 145. link | 14 |
| 118. function | 24 | 146. locate | 11 |
| 119. fundamental | 1 | 147. logic | 5 |
| 120. generate | 11 | 148. maintain | 12 |
| 121. generation | 1 | 149. major | 2 |
| 122. globe | 1 | 150. margin | 1 |
| 123. grade | 1 | 151. mature | 4 |
| 124. guarantee | 1 | 152. maximize | 8 |
| 125. identify | 2 | 153. mechanism | 1 |
| 126. illustrate | 1 | 154. media | 1 |
| 127. image | 7 | 155. medium | 3 |
| 128. impact | 21 | 156. mental | 1 |
| 129. incidence | 2 | 157. method | 8 |
| 130. incorporate | 3 | 158. military | 1 |
| 131. index | 3 | 159. minimum | 2 |
| 132. indicate | 11 | 160. minor | 2 |
| 133. inherent | 2 | 161. modify | 8 |
| 134. initial | 4 | 162. monitor | 5 |
| 135. initiate | 8 | 163. negate | 1 |
| 136. intervene | 1 | 164. network | 2 |
| 137. invest | 2 | 165. normal | 5 |
| 138. involve | 3 | 166. nuclear | 2 |
| 139. item | 6 | 167. obtain | 2 |
| 140. job | 3 | 168. obvious | 1 |

Table 6 (Continued)

| Word Families | Occurrences | Word Families | Occurrences |
|----------------------|--------------------|----------------------|--------------------|
| 169. occupy | 1 | 197. promote | 1 |
| 170. occur | 4 | 198. proportion | 1 |
| 171. outcome | 3 | 199. purchase | 2 |
| 172. output | 12 | 200. pursue | 1 |
| 173. overall | 1 | 201. random | 1 |
| 174. panel | 2 | 202. range | 6 |
| 175. paragraph | 12 | 203. ratio | 2 |
| 176. parallel | 1 | 204. react | 6 |
| 177. partner | 3 | 205. recover | 1 |
| 178. passive | 12 | 206. refine | 1 |
| 179. percent | 1 | 207. region | 1 |
| 180. period | 4 | 208. regulate | 4 |
| 181. persist | 1 | 209. release | 7 |
| 182. perspective | 1 | 210. rely | 7 |
| 183. phase | 1 | 211. remove | 1 |
| 184. phenomenon | 1 | 212. require | 13 |
| 185. physical | 6 | 213. research | 3 |
| 186. plus | 1 | 214. reside | 1 |
| 187. positive | 1 | 215. respond | 1 |
| 188. potential | 3 | 216. restore | 2 |
| 189. predict | 1 | 217. restrain | 1 |
| 190. predominant | 1 | 218. restrict | 1 |
| 191. primary | 2 | 219. retain | 5 |
| 192. prime | 2 | 220. reveal | 1 |
| 193. prior | 1 | 21. reverse | 1 |
| 194. proceed | 2 | 222. rigid | 3 |
| 195. process | 21 | 223. role | 2 |
| 196. project | 3 | 224. scope | 2 |

Table 6 (Continued)

| Word Families | Occurrences | Word Families | Occurrences |
|----------------------|--------------------|----------------------|--------------------|
| 225. section | 1 | 250. tense | 7 |
| 226. select | 2 | 251. terminate | 2 |
| 227. sequence | 3 | 252. text | 1 |
| 228. series | 4 | 253. topic | 1 |
| 229. significant | 4 | 254. trace | 1 |
| 230. similar | 5 | 255. tradition | 3 |
| 231. site | 5 | 256. transfer | 9 |
| 232. somewhat | 1 | 257. transform | 2 |
| 233. source | 2 | 258. transmit | 9 |
| 234. specific | 2 | 259. transport | 2 |
| 235. sphere | 1 | 260. trend | 1 |
| 236. stable | 15 | 261. trigger | 1 |
| 237. stress | 1 | 262. undergo | 2 |
| 238. structure | 9 | 263. uniform | 2 |
| 239. summary | 6 | 264. unique | 5 |
| 240. survey | 1 | 265. utilize | 1 |
| 241. survive | 4 | 266. valid | 1 |
| 242. suspend | 1 | 267. vary | 2 |
| 243. sustain | 1 | 268. vehicle | 29 |
| 244. target | 1 | 269. via | 1 |
| 245. task | 10 | 270. virtual | 1 |
| 246. team | 2 | 271. visible | 1 |
| 247. technical | 17 | 272. volume | 5 |
| 248. technology | 16 | 273. whereas | 4 |
| 249. temporary | 1 | 274. widespread | 2 |

Table 7 The 100 Most Frequent Words from the “Other” List in TU1 Corpus

| NO. | Word Families | | | Occurrences |
|-----|---------------|---------------|---------------|-------------|
| | Proper | Technical | Low Frequency | |
| 1. | | | solar | 105 |
| 2. | | brake | | 86 |
| 3. | | | tank | 49 |
| 4. | | | storage | 42 |
| 5. | | laser | | 38 |
| 6. | | sensor | | 33 |
| 7. | | | ceramic | 29 |
| 8. | | | absorb | 27 |
| 9. | | | fluid | 25 |
| 10. | | cell | | 24 |
| 11. | | | circulate | 22 |
| 12. | | | diagram | 20 |
| 13. | | | thermal | 20 |
| 14. | | | rear | 19 |
| 15. | | | chill | 16 |
| 16. | | | radiant | 15 |
| 17. | | | optical | 14 |
| 18. | | heater | | 13 |
| 19. | | semiconductor | | 13 |
| 20. | | motor | | 12 |
| 21. | Sinthu | | | 12 |
| 22. | | atom | | 11 |
| 23. | Billy | | | 11 |
| 24. | | | ductile | 11 |
| 25. | | | generate | 11 |
| 26. | | | inflate | 11 |
| 27. | Chuan | | | 10 |
| 28. | | | electronic | 10 |

Table 7 (Continued)

| NO. | Word Families | | | Occurrences |
|-----|---------------|---------------|---------------|-------------|
| | Proper | Technical | Low Frequency | |
| 29. | | | exchanger | 10 |
| 30. | | | insulate | 10 |
| 31. | | | mirror | 10 |
| 32. | | | mount | 10 |
| 33. | | | brittle | 9 |
| 34. | | | conduct | 9 |
| 35. | | configuration | | 9 |
| 36. | | | decelerate | 9 |
| 37. | | | deploy | 9 |
| 38. | | hydraulic | | 9 |
| 39. | | modular | | 9 |
| 40. | | | pedal | 9 |
| 41. | | | Skid | 9 |
| 42. | | | adjective | 8 |
| 43. | | | cavern | 8 |
| 44. | | | column | 8 |
| 45. | | crystal | | 8 |
| 46. | | | emergency | 8 |
| 47. | | | exterior | 8 |
| 48. | | | holography | 8 |
| 49. | | | malleable | 8 |
| 50. | | | checklist | 7 |
| 51. | | circuit | | 7 |
| 52. | | | comprehend | 7 |
| 53. | | convection | | 7 |
| 54. | | cylinder | | 7 |
| 55. | | | install | 7 |
| 56. | | | molten | 7 |

Table 7 (Continued)

| NO. | Word Families | | | Occurrences |
|-----|---------------|-----------|---------------|-------------|
| | Proper | Technical | Low Frequency | |
| 57. | | piston | | 7 |
| 58. | | scan | | 7 |
| 59. | | | through | 7 |
| 60. | | | automotive | 6 |
| 61. | | | cast | 6 |
| 62. | | | champer | 6 |
| 63. | | | combustible | 6 |
| 64. | | | compress | 6 |
| 65. | | coolant | | 6 |
| 66. | | | detonate | 6 |
| 67. | | | fuel | 6 |
| 68. | | | ice | 6 |
| 69. | | | narrative | 6 |
| 70. | | | pedestrian | 6 |
| 71. | | | phrase | 6 |
| 72. | | | thermosiphon | 6 |
| 73. | | | transparent | 6 |
| 74. | | | truck | 6 |
| 75. | | turbine | | 6 |
| 76. | | | value | 6 |
| 77. | | | vertical | 6 |
| 78. | | | vocabulary | 6 |
| 79. | | zirconium | | 6 |
| 80. | | | airbag | 5 |
| 81. | | | align | 5 |
| 82. | Benton | | | 5 |
| 83. | | | cube | 5 |
| 84. | | | deteriorate | 5 |

Table 7 (Continued)

| NO. | Word Families | | | Occurrences |
|------|---------------|-----------|---------------|-------------|
| | Proper | Technical | Low Frequency | |
| 85. | | | diagnose | 5 |
| 86. | | fiber | | 5 |
| 87. | | | fraction | 5 |
| 88. | | | frontal | 5 |
| 89. | | | fusible | 5 |
| 90. | | heliostat | | 5 |
| 91. | | | hologram | 5 |
| 92. | | | junction | 5 |
| 93. | | | magnet | 5 |
| 94. | | modem | | 5 |
| 95. | | oxygen | | 5 |
| 96. | | | portable | 5 |
| 97. | | | pottery | 5 |
| 98. | | | pressurize | 5 |
| 99. | | | redecorate | 5 |
| 100. | | | reference | 5 |

In TU1 corpus, 'Other' group contained a greater number of words than the AWL (See Table 5). In other words, the number of words in 'Other' list is double of that in AWL list. The list of the 100 most frequently occurring words in TU1 reveals that 72 words are in the low frequency group which is considered as the majority of this group. Additionally, technical words were also found which accounted for over 20% of the 'Other' list. However, there are very few proper nouns in this group and all of them are place names and people names. They are *Chaun*, *Sinthu*, and *Benton*.

Table 8 Overlapping AWL words in TU and TU1 Corpora

| No. | word | No. | word | No. | word | No. | word |
|-----|-------------|-----|-------------|-----|-------------|------|------------|
| 1. | access | 28. | comment | 55. | cycle | 82. | eventual |
| 2. | achieve | 29. | communicate | 56. | decade | 83. | expand |
| 3. | adjacent | 30. | community | 57. | define | 84. | export |
| 4. | adjust | 31. | compensate | 58. | definite | 85. | expose |
| 5. | affect | 32. | component | 59. | derive | 86. | external |
| 6. | alternative | 33. | comprise | 60. | design | 87. | extract |
| 7. | analyze | 34. | compute | 61. | detect | 88. | facilitate |
| 8. | annual | 35. | concentrate | 62. | device | 89. | factor |
| 9. | approach | 36. | concept | 63. | dimension | 90. | feature |
| 10. | appropriate | 37. | conduct | 64. | display | 91. | final |
| 11. | approximate | 38. | confirm | 65. | distinct | 92. | flexible |
| 12. | area | 39. | consequent | 66. | distribute | 93. | focus |
| 13. | aspect | 40. | consist | 67. | document | 94. | function |
| 14. | assemble | 41. | construct | 68. | economy | 95. | generation |
| 15. | attach | 42. | consult | 69. | element | 96. | globe |
| 16. | available | 43. | consume | 70. | eliminate | 97. | grade |
| 17. | benefit | 44. | contact | 71. | emphasis | 98. | identify |
| 18. | bond | 45. | context | 72. | enable | 99. | illustrate |
| 19. | brief | 46. | contract | 73. | encounter | 100. | impact |
| 20. | capable | 47. | contrast | 74. | energy | 101. | incidence |
| 21. | capacity | 48. | contribute | 75. | ensure | 102. | indicate |
| 22. | category | 49. | convene | 76. | environment | 103. | injure |
| 23. | channel | 50. | convert | 77. | equip | 104. | inspect |
| 24. | chemical | 51. | convince | 78. | equivalent | 105. | intense |
| 25. | civil | 52. | co-ordinate | 79. | erode | 106. | invest |
| 26. | clause | 53. | credit | 80. | establish | 107. | involve |
| 27. | code | 54. | criteria | 81. | evaluate | 108. | item |

Table 8 (Continued)

| No. | word | No. | word | No. | word | No. | word |
|------------|-------------|------------|-------------|------------|-------------|------------|-------------|
| 109. | job | 134. | panel | 159. | regulate | 184. | suspend |
| 110. | label | 135. | paragraph | 160. | release | 185. | target |
| 111. | layer | 136. | parallel | 161. | remove | 186. | task |
| 112. | lecture | 137. | partner | 162. | require | 187. | team |
| 113. | link | 138. | passive | 163. | research | 188. | technical |
| 114. | locate | 139. | percent | 164. | reside | 189. | technology |
| 115. | maintain | 140. | period | 165. | respond | 190. | temporary |
| 116. | major | 141. | phenomenon | 166. | retain | 191. | tense |
| 117. | mechanism | 142. | physical | 167. | reveal | 192. | text |
| 118. | media | 143. | plus | 168. | reverse | 193. | topic |
| 119. | mental | 144. | potential | 169. | role | 194. | transfer |
| 120. | method | 145. | predict | 170. | section | 195. | transmit |
| 121. | military | 146. | primary | 171. | select | 196. | transport |
| 122. | minor | 147. | prime | 172. | sequence | 197. | trend |
| 123. | modify | 148. | proceed | 173. | series | 198. | trigger |
| 124. | negate | 149. | process | 174. | significant | 199. | undergo |
| 125. | network | 150. | project | 175. | similar | 200. | unique |
| 126. | normal | 151. | proportion | 176. | site | 201. | vary |
| 127. | nuclear | 152. | purchase | 177. | somewhat | 202. | vehicle |
| 128. | obtain | 153. | random | 178. | source | 203. | via |
| 129. | obvious | 154. | range | 179. | specific | 204. | volume |
| 130. | occupy | 155. | ratio | 180. | stress | 205. | whereas |
| 131. | occur | 156. | react | 181. | structure | | |
| 132. | output | 157. | recover | 182. | summary | | |
| 133. | overall | 158. | refine | 183. | survive | | |

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Table 9 Word Families, Frequency and Coverage in RSU Corpus

| Words Groups | Word Families | Word Occurrences | Coverage |
|--------------|---------------|------------------|----------|
| GSL | 1,194 | 33,119 | 84.28% |
| AWL | 267 | 2,189 | 5.57% |
| Other | ? | 3,990 | 10.15% |
| Total | 1,461+? | 39,298 | 100% |

According to Table 9, the corpus of English for engineering material used by Rangsit university students in first year is the largest comparing to other corpora in the study as it comprised of 39,298 running words. This corpus was covered by 84.28% of GSL in which 1,194 word families were included. Furthermore, 267 AWL word families or 5.57% appeared in this corpus. In addition, the number of AWL word occurrences in this corpus is nearly the double of that both TU and TU1 corpora.

Table 10 The Commonly Occurring AWL Words with Their Frequencies in RSU Corpus

| Word Families | Occurrences | Word Families | Occurrences |
|----------------|-------------|-----------------|-------------|
| 1. access | 2 | 12. appropriate | 17 |
| 2. accurate | 13 | 13. approximate | 1 |
| 3. acknowledge | 4 | 14. area | 29 |
| 4. adapt | 3 | 15. assemble | 8 |
| 5. adequate | 2 | 16. assess | 18 |
| 6. adjust | 6 | 17. assure | 2 |
| 7. affect | 6 | 18. attach | 3 |
| 8. aid | 3 | 19. authority | 1 |
| 9. alternative | 2 | 20. automate | 9 |
| 10. analyze | 2 | 21. available | 7 |
| 11. annual | 1 | 22. benefit | 1 |

Table 10 (Continued)

| | Word Families | Occurrences | Word Families | Occurrences |
|-----|----------------------|--------------------|----------------------|--------------------|
| 23. | bond | 2 | 51. consult | 2 |
| 24. | brief | 8 | 52. contact | 8 |
| 25. | capacity | 11 | 53. context | 2 |
| 26. | challenge | 5 | 54. contract | 3 |
| 27. | chart | 2 | 55. contribute | 2 |
| 28. | chemical | 9 | 56. convene | 4 |
| 29. | civil | 20 | 57. convert | 10 |
| 30. | clarify | 1 | 58. cooperate | 3 |
| 31. | clause | 21 | 59. coordinate | 2 |
| 32. | code | 2 | 60. core | 5 |
| 33. | collapse | 1 | 61. create | 14 |
| 34. | colleague | 1 | 62. credit | 2 |
| 35. | comment | 3 | 63. cycle | 2 |
| 36. | commission | 1 | 64. data | 15 |
| 37. | communicate | 17 | 65. debate | 1 |
| 38. | compatible | 2 | 66. define | 7 |
| 39. | complex | 4 | 67. definite | 1 |
| 40. | component | 26 | 68. design | 116 |
| 41. | compound | 6 | 69. detect | 20 |
| 42. | compute | 80 | 70. device | 55 |
| 43. | conduct | 1 | 71. dimension | 11 |
| 44. | confer | 1 | 72. displace | 2 |
| 45. | confine | 1 | 73. display | 9 |
| 46. | consequent | 1 | 74. dispose | 1 |
| 47. | considerable | 1 | 75. document | 2 |
| 48. | consist | 12 | 76. domestic | 8 |
| 49. | constant | 3 | 77. duration | 1 |
| 50. | construct | 26 | 78. economy | 3 |

Table 10 (Continued)

| Word Families | Occurrences | Word Families | Occurrences |
|----------------------|--------------------|----------------------|--------------------|
| 79. edit | 5 | 107. incidence | 1 |
| 80. element | 1 | 108. indicate | 10 |
| 81. emphasis | 2 | 109. individual | 5 |
| 82. energy | 20 | 110. induce | 1 |
| 83. ensure | 3 | 111. initial | 1 |
| 84. environment | 10 | 112. injure | 6 |
| 85. equip | 36 | 113. innovate | 5 |
| 86. error | 3 | 114. input | 4 |
| 87. estimate | 1 | 115. insert | 3 |
| 88. evaluate | 4 | 116. inspect | 5 |
| 89. eventual | 1 | 117. institute | 1 |
| 90. evolve | 1 | 118. instruct | 13 |
| 91. exhibit | 1 | 119. integrate | 4 |
| 92. expand | 1 | 120. intense | 2 |
| 93. expert | 3 | 121. interact | 1 |
| 94. export | 1 | 122. internal | 6 |
| 95. expose | 3 | 123. interpret | 2 |
| 96. flexible | 8 | 124. invest | 1 |
| 97. format | 5 | 125. investigate | 6 |
| 98. foundation | 8 | 126. involve | 10 |
| 99. framework | 1 | 127. issue | 3 |
| 100. function | 24 | 128. item | 17 |
| 101. generate | 6 | 129. job | 82 |
| 102. globe | 7 | 130. label | 4 |
| 103. guarantee | 1 | 131. layer | 4 |
| 104. identify | 11 | 132. lecture | 1 |
| 105. image | 14 | 133. legal | 12 |
| 106. impact | 2 | 134. license | 2 |

Table 10 (Continued)

| Word Families | Occurrences | Word Families | Occurrences |
|----------------------|--------------------|----------------------|--------------------|
| 135. link | 25 | 163. panel | 4 |
| 136. locate | 11 | 164. paragraph | 2 |
| 137. logic | 2 | 165. partner | 37 |
| 138. maintain | 7 | 166. passive | 23 |
| 139. major | 2 | 167. percent | 2 |
| 140. manual | 5 | 168. period | 9 |
| 141. maximize | 17 | 169. physical | 4 |
| 142. mechanism | 11 | 170. plus | 6 |
| 143. media | 6 | 171. positive | 25 |
| 144. medical | 19 | 172. precede | 1 |
| 145. mental | 1 | 173. precise | 4 |
| 146. method | 3 | 174. predict | 17 |
| 147. military | 4 | 175. previous | 1 |
| 148. minor | 1 | 176. prior | 1 |
| 149. mode | 1 | 177. proceed | 1 |
| 150. modify | 2 | 178. process | 47 |
| 151. monitor | 16 | 179. professional | 8 |
| 152. motive | 5 | 180. project | 12 |
| 153. negate | 27 | 181. promote | 1 |
| 154. network | 10 | 182. proportion | 1 |
| 155. normal | 1 | 183. prospect | 2 |
| 156. nuclear | 5 | 184. protocol | 2 |
| 157. obtain | 1 | 185. publish | 1 |
| 158. obvious | 1 | 186. random | 1 |
| 159. occupy | 1 | 187. range | 16 |
| 160. occur | 1 | 188. ratio | 8 |
| 161. output | 4 | 189. react | 1 |
| 162. overseas | 3 | 190. regulate | 5 |

Table 10 (Continued)

| Word Families | Occurrences | Word Families | Occurrences |
|----------------------|--------------------|----------------------|--------------------|
| 191. reinforce | 7 | 219. sole | 1 |
| 192. relax | 1 | 220. source | 4 |
| 193. release | 2 | 221. specific | 2 |
| 194. relevant | 2 | 222. specify | 1 |
| 195. remove | 10 | 223. sphere | 1 |
| 196. require | 35 | 224. strategy | 1 |
| 197. research | 9 | 225. stress | 24 |
| 198. resolve | 1 | 226. structure | 18 |
| 199. respond | 5 | 227. successor | 1 |
| 200. restrain | 3 | 228. sufficient | 1 |
| 201. restrict | 2 | 229. sum | 1 |
| 202. retain | 1 | 230. summary | 2 |
| 203. revise | 1 | 231. supplement | 1 |
| 204. role | 9 | 232. survey | 6 |
| 205. route | 1 | 233. suspend | 2 |
| 206. schedule | 2 | 234. symbol | 5 |
| 207. scheme | 1 | 235. tape | 4 |
| 208. section | 1 | 236. target | 5 |
| 209. sector | 1 | 237. task | 6 |
| 210. secure | 22 | 238. team | 10 |
| 211. seek | 1 | 239. technical | 23 |
| 212. select | 5 | 240. technology | 123 |
| 213. sequence | 8 | 241. temporary | 1 |
| 214. series | 1 | 242. text | 62 |
| 215. shift | 2 | 243. theory | 1 |
| 216. similar | 9 | 244. topic | 8 |
| 217. simulate | 8 | 245. tradition | 1 |
| 218. site | 33 | 246. transfer | 6 |

Table 10 (Continued)

| Word Families | Occurrences | Word Families | Occurrences |
|----------------------|--------------------|----------------------|--------------------|
| 247. transmit | 6 | 255. via | 6 |
| 248. transport | 30 | 256. virtual | 3 |
| 249. trend | 2 | 257. visible | 11 |
| 250. unique | 1 | 258. vision | 1 |
| 251. vary | 4 | 259. visual | 1 |
| 252. vehicle | 10 | 260. voluntary | 1 |
| 253. vehicle | 10 | 261. whereas | 1 |
| 254. version | 5 | | |

Table 11 The 100 Most Frequent Words from the “Other” List in RSU Corpus

| NO. | Word Families | | | Occurrences |
|------------|----------------------|------------------|----------------------|--------------------|
| | Proper | Technical | Low Frequency | |
| 1. | | plastic | | 48 |
| 2. | | | objective | 47 |
| 3. | | | phase | 38 |
| 4. | | battery | | 37 |
| 5. | | | technician | 35 |
| 6. | | | fuel | 33 |
| 7. | | | interview | 33 |
| 8. | | | robot | 31 |
| 9. | | | infinitive | 28 |
| 10. | | | bike | 27 |
| 11. | | | advertise | 26 |
| 12. | | | digital | 26 |
| 13. | | diagram | | 25 |

Table 11 (Continued)

| NO. | Word Families | | | Occurrences |
|-----|---------------|-----------|---------------|-------------|
| | Proper | Technical | Low Frequency | |
| 14. | | | mould | 25 |
| 15. | | | electronic | 24 |
| 16. | | | column | 23 |
| 17. | | | download | 23 |
| 18. | | | pronunciation | 23 |
| 19. | | aluminum | | 22 |
| 20. | | | install | 22 |
| 21. | | | airbus | 21 |
| 22. | | | reference | 21 |
| 23. | | | satellite | 21 |
| 24. | | | tick | 21 |
| 25. | | | internet | 19 |
| 26. | | sensor | | 19 |
| 27. | | | skyscraper | 19 |
| 28. | | | email | 18 |
| 29. | | scan | | 18 |
| 30. | | video | | 18 |
| 31. | | | boeing | 17 |
| 32. | | carbon | | 16 |
| 33. | | | peripheral | 16 |
| 34. | | software | | 16 |
| 35. | | brake | | 15 |
| 36. | | cell | | 15 |
| 37. | | | pollute | 15 |
| 38. | | | auxiliary | 14 |
| 39. | | gear | | 14 |
| 40. | | lab | | 14 |

Table 11 (Continued)

| NO. | Word Families | | | Occurrences |
|-----|---------------|-----------------------|---------------|-------------|
| | Proper | Technical | Low Frequency | |
| 41. | | | mobile | 14 |
| 42. | | | prototype | 14 |
| 43. | | telecommunica tion | | 14 |
| 44. | | | vocabulary | 14 |
| 45. | | titanium | | 14 |
| 46. | | | career | 13 |
| 47. | | | cd | 13 |
| 48. | | | checklist | 13 |
| 49. | | hydrogen | | 13 |
| 50. | | | ole | 13 |
| 51. | | | pairwork | 13 |
| 52. | | piston | | 13 |
| 53. | | | traffic | 13 |
| 54. | | | coat | 12 |
| 55. | | diesel | | 12 |
| 56. | | hybrid | | 12 |
| 57. | | | math | 12 |
| 58. | | | packet | 12 |
| 59. | | | participate | 12 |
| 60. | | | skateboard | 12 |
| 61. | | | clockwise | 11 |
| 62. | | | deck | 11 |
| 63. | | | orbit | 11 |
| 64. | | | tag | 11 |
| 65. | | | DVD | 10 |

Table 11 (Continued)

| NO. | Word Families | | | Occurrences |
|-----|---------------|----------------|---------------|-------------|
| | Proper | Technical | Low Frequency | |
| 66. | | nylon | | 10 |
| 67. | | | online | 10 |
| 68. | | | tiny | 10 |
| 69. | | | veld | 10 |
| 70. | | | wireless | 10 |
| 71. | | alloy | | 9 |
| 72. | | CCTV | | 9 |
| 73. | | | compress | 9 |
| 74. | | | girde | 9 |
| 75. | | hydraulic | | 9 |
| 76. | | | inject | 9 |
| 77. | | microprocessor | | 9 |
| 78. | | | script | 9 |
| 79. | | | sketch | 9 |
| 80. | | | vest | 9 |
| 81. | | | void | 9 |
| 82. | Africa | | | 8 |
| 83. | | | corrosion | 8 |
| 84. | | | deferent | 8 |
| 85. | | | diploma | 8 |
| 86. | | | fluid | 8 |
| 87. | | petroleum | | 8 |
| 88. | | plug | | 8 |
| 89. | | | rotate | 8 |
| 90. | | | syllable | 8 |

Table 11 (Continued)

| NO. | Word Families | | | Occurrences |
|------|---------------|------------|---------------|-------------|
| | Proper | Technical | Low Frequency | |
| 91. | | ultrasound | | 8 |
| 92. | | | web | 7 |
| 93. | | | webquest | 7 |
| 94. | | | appliance | 7 |
| 95. | | | ark | 7 |
| 96. | | | boyish | 7 |
| 97. | | | CV | 7 |
| 98. | | | defect | 7 |
| 99. | | | dependable | 7 |
| 100. | Diana | | | 7 |

To consider words in the 'Other' list from Table 11, it can be seen that over two thirds of the first one hundred common words belong to the low frequency group. The rest of them are in the technical word group and only two words (*Africa* and *Diana*) found in proper noun group.

An Analysis of English for Engineering Classroom Material Used by Rangsit University Students, Second Year (RSU1 Corpus)

Table 12 Word Families, Frequency and Coverage in RSU1 Corpus

| Words Groups | Word Families | Word Occurrences | Coverage |
|--------------|---------------|------------------|----------|
| GSL | 1,260 | 32,286 | 84.13% |
| AWL | 323 | 2,307 | 6.01% |
| Other | ? | 3,781 | 9.85% |
| Total | 1,583+? | 38,374 | 100% |

The second course material from Rangsit University students showed 84.13% coverage by the GSL word which was similar to the RSU corpus (84.28%). However, coverage by AWL word (6.01%) in RSU1 was slightly higher than RSU corpus (5.57%). Besides, the percentage of words from 'Other' group appeared in the second year material was almost equal in average to words from 'Other' group used in the first year. (See Table 12 and Table 9)

Table 13 The Commonly Occurring AWL Words with Their Frequencies in RU1 Corpus

| | Word Families | Occurrences | Word Families | Occurrences | |
|-----|---------------|-------------|---------------|-------------|----|
| 1. | abstract | 6 | 22. | approximate | 5 |
| 2. | academy | 1 | 23. | area | 25 |
| 3. | access | 7 | 24. | aspect | 2 |
| 4. | accommodate | 8 | 25. | assemble | 4 |
| 5. | accompany | 1 | 26. | assess | 23 |
| 6. | accurate | 8 | 27. | assign | 1 |
| 7. | achieve | 8 | 28. | assist | 5 |
| 8. | acknowledge | 1 | 29. | assume | 1 |
| 9. | acquire | 2 | 30. | assure | 1 |
| 10. | adapt | 3 | 31. | attach | 4 |
| 11. | adjust | 3 | 32. | attitude | 1 |
| 12. | affect | 4 | 33. | authority | 1 |
| 13. | aid | 6 | 34. | automate | 15 |
| 14. | alter | 1 | 35. | available | 4 |
| 15. | alternative | 17 | 36. | aware | 1 |
| 16. | analyze | 6 | 37. | benefit | 1 |
| 17. | annual | 1 | 38. | bias | 1 |
| 18. | apparent | 2 | 39. | brief | 7 |
| 19. | appreciate | 1 | 40. | capable | 1 |
| 20. | approach | 5 | 41. | capacity | 4 |
| 21. | appropriate | 7 | 42. | category | 1 |

Table 13 (Continued)

| Word Families | Occurrences | Word Families | Occurrences |
|----------------------|--------------------|----------------------|--------------------|
| 43. challenge | 7 | 71. constant | 6 |
| 44. channel | 4 | 72. constitute | 3 |
| 45. chart | 18 | 73. construct | 21 |
| 46. chemical | 14 | 74. consult | 2 |
| 47. circumstance | 3 | 75. consume | 8 |
| 48. civil | 2 | 76. contact | 7 |
| 49. clarify | 1 | 77. context | 1 |
| 50. clause | 47 | 78. contract | 3 |
| 51. code | 5 | 79. contrast | 1 |
| 52. collapse | 3 | 80. contribute | 3 |
| 53. colleague | 1 | 81. convene | 16 |
| 54. comment | 2 | 82. convert | 9 |
| 55. communicate | 21 | 83. convince | 2 |
| 56. community | 5 | 84. corporate | 1 |
| 57. compatible | 1 | 85. couple | 2 |
| 58. complex | 11 | 86. create | 14 |
| 59. component | 29 | 87. credit | 1 |
| 60. compound | 8 | 88. culture | 2 |
| 61. comprise | 2 | 89. cycle | 1 |
| 62. compute | 35 | 90. data | 7 |
| 63. conclude | 6 | 91. define | 6 |
| 64. conduct | 2 | 92. definite | 3 |
| 65. confer | 3 | 93. demonstrate | 3 |
| 66. confirm | 3 | 94. deny | 2 |
| 67. conflict | 3 | 95. derive | 1 |
| 68. consequent | 2 | 96. design | 68 |
| 69. considerable | 7 | 97. detect | 21 |
| 70. consist | 9 | 98. device | 17 |

Table 13 (Continued)

| Word Families | Occurrences | Word Families | Occurrences |
|----------------------|--------------------|----------------------|--------------------|
| 99. dimension | 2 | 127. federal | 1 |
| 100. display | 3 | 128. file | 2 |
| 101. dispose | 10 | 129. final | 11 |
| 102. distinct | 1 | 130. finance | 1 |
| 103. distort | 1 | 131. flexible | 3 |
| 104. distribute | 1 | 132. fluctuate | 1 |
| 105. document | 1 | 133. focus | 4 |
| 106. domestic | 4 | 134. format | 1 |
| 107. drama | 1 | 135. foundation | 8 |
| 108. element | 2 | 136. founded | 1 |
| 109. emphasis | 6 | 137. framework | 4 |
| 110. enable | 17 | 138. function | 13 |
| 111. energy | 57 | 139. fund | 1 |
| 112. enormous | 1 | 140. generate | 11 |
| 113. ensure | 2 | 141. generation | 5 |
| 114. environment | 31 | 142. globe | 9 |
| 115. equip | 28 | 143. grade | 2 |
| 116. error | 1 | 144. guarantee | 1 |
| 117. estate | 1 | 145. highlight | 1 |
| 118. estimate | 2 | 146. identify | 6 |
| 119. evaluate | 4 | 147. illustrate | 4 |
| 120. eventual | 1 | 148. image | 2 |
| 121. evident | 3 | 149. impact | 11 |
| 122. expand | 6 | 150. implement | 2 |
| 123. expert | 1 | 151. incidence | 3 |
| 124. expose | 4 | 152. income | 1 |
| 125. extract | 2 | 153. incorporate | 1 |
| 126. feature | 7 | 154. indicate | 5 |

Table 13 (Continued)

| Word Families | Occurrences | Word Families | Occurrences |
|----------------------|--------------------|----------------------|--------------------|
| 155. individual | 2 | 183. lecture | 3 |
| 156. induce | 4 | 184. legal | 2 |
| 157. infer | 8 | 185. license | 2 |
| 158. injure | 6 | 186. link | 28 |
| 159. innovate | 4 | 187. locate | 12 |
| 160. input | 1 | 188. logic | 3 |
| 161. inspect | 9 | 189. maintain | 22 |
| 162. institute | 1 | 190. major | 8 |
| 163. instruct | 16 | 191. manipulate | 1 |
| 164. integrate | 2 | 192. maximize | 9 |
| 165. intelligence | 4 | 193. mechanism | 3 |
| 166. intense | 1 | 194. media | 2 |
| 167. interact | 1 | 195. medical | 3 |
| 168. internal | 4 | 196. medium | 1 |
| 169. interpret | 1 | 197. method | 12 |
| 170. interval | 1 | 198. military | 3 |
| 171. invest | 3 | 199. minimize | 5 |
| 172. investigate | 1 | 200. minimum | 4 |
| 173. involve | 12 | 201. mode | 2 |
| 174. isolate | 1 | 202. modify | 1 |
| 175. issue | 7 | 203. monitor | 13 |
| 176. item | 11 | 204. motive | 2 |
| 177. job | 68 | 205. negate | 5 |
| 178. journal | 3 | 206. network | 30 |
| 179. justify | 2 | 207. normal | 11 |
| 180. label | 12 | 208. nuclear | 4 |
| 181. labor | 1 | 209. obtain | 5 |
| 182. layer | 4 | 210. occur | 1 |

Table 13 (Continued)

| Word Families | Occurrences | Word Families | Occurrences |
|----------------------|--------------------|----------------------|--------------------|
| 211. option | 4 | 239. radical | 1 |
| 212. outcome | 1 | 240. range | 18 |
| 213. output | 4 | 241. ratio | 1 |
| 214. panel | 5 | 242. react | 1 |
| 215. paragraph | 5 | 243. recover | 3 |
| 216. parallel | 3 | 244. refine | 6 |
| 217. partner | 27 | 245. region | 1 |
| 218. passive | 20 | 246. regulate | 7 |
| 219. percent | 1 | 247. reinforce | 2 |
| 220. period | 5 | 248. reject | 1 |
| 221. physical | 4 | 249. relax | 1 |
| 222. plus | 1 | 250. release | 5 |
| 223. positive | 13 | 251. relevant | 5 |
| 224. potential | 4 | 252. rely | 1 |
| 225. precede | 3 | 253. remove | 17 |
| 226. precise | 4 | 254. require | 31 |
| 227. predict | 19 | 255. research | 22 |
| 228. previous | 5 | 256. respond | 5 |
| 229. principal | 1 | 257. restrict | 1 |
| 230. principle | 3 | 258. revenue | 1 |
| 231. prior | 2 | 259. reverse | 5 |
| 232. priority | 1 | 260. revise | 2 |
| 233. process | 20 | 261. revolution | 3 |
| 234. professional | 2 | 262. role | 4 |
| 235. prohibit | 1 | 263. specific | 7 |
| 236. project | 29 | 264. stable | 8 |
| 237. promote | 2 | 265. statistic | 2 |
| 238. prospect | 1 | 266. strategy | 2 |

Table 13 (Continued)

| Word Families | Occurrences | Word Families | Occurrences |
|----------------------|--------------------|----------------------|--------------------|
| 267. stress | 17 | 296. task | 7 |
| 268. structure | 24 | 297. team | 12 |
| 269. style | 1 | 298. technical | 27 |
| 270. substitute | 1 | 299. technique | 5 |
| 271. sufficient | 5 | 300. technology | 78 |
| 272. summary | 3 | 301. temporary | 1 |
| 273. survey | 2 | 302. tense | 20 |
| 274. survive | 1 | 303. text | 85 |
| 275. suspend | 10 | 304. topic | 11 |
| 276. route | 7 | 305. tradition | 2 |
| 277. scenario | 2 | 306. transfer | 15 |
| 278. schedule | 4 | 307. transit | 1 |
| 279. scheme | 4 | 308. transmit | 15 |
| 280. scope | 1 | 309. transport | 27 |
| 281. section | 10 | 310. trend | 3 |
| 282. sector | 13 | 311. trigger | 7 |
| 283. secure | 4 | 312. undertake | 1 |
| 284. select | 5 | 313. uniform | 1 |
| 285. sequence | 3 | 314. unify | 1 |
| 286. series | 9 | 315. unique | 2 |
| 287. shift | 2 | 316. vary | 8 |
| 288. significant | 7 | 317. vehicle | 21 |
| 289. similar | 7 | 318. version | 5 |
| 290. site | 13 | 319. visible | 3 |
| 291. somewhat | 2 | 320. vision | 3 |
| 292. source | 20 | 321. visual | 6 |
| 293. sustain | 10 | 322. volume | 1 |
| 294. symbol | 3 | 323. voluntary | 1 |
| 295. target | 2 | | |

Table 14 The 100 Most Frequent Words from the “Other” List in RU1 Corpus

| NO. | Word Families | | | Occurrences |
|-----|---------------|-----------|---------------|-------------|
| | Proper | Technical | Low Frequency | |
| 1. | | plastic | | 99 |
| 2. | | | robot | 72 |
| 3. | | | interview | 43 |
| 4. | | | tunnel | 40 |
| 5. | | | infinitive | 37 |
| 6. | | diagram | | 33 |
| 7. | | | drill | 33 |
| 8. | | | electronic | 33 |
| 9. | | sensor | | 31 |
| 10. | | | switch | 27 |
| 11. | | | adjective | 26 |
| 12. | | circuit | | 26 |
| 13. | | | reference | 24 |
| 14. | | | aircraft | 21 |
| 15. | | turbine | | 19 |
| 16. | | | apprentice | 18 |
| 17. | | | preposition | 18 |
| 18. | | | tick | 18 |
| 19. | | battery | | 17 |
| 20. | | | email | 17 |
| 21. | | | fuel | 17 |
| 22. | | | graph | 17 |
| 23. | | | phrase | 17 |
| 24. | | rig | | 17 |
| 25. | | bacteria | | 16 |
| 26. | | | checklist | 16 |

Table 14 (Continued)

| NO. | Word Families | | | Occurrences |
|-----|---------------|-----------|---------------|-------------|
| | Proper | Technical | Low Frequency | |
| 27. | | | relay | 16 |
| 28. | | | refrigerant | 15 |
| 29. | | carbon | | 14 |
| 30. | | | insulate | 14 |
| 31. | | | platform | 14 |
| 32. | | | syllable | 14 |
| 33. | | | vocabulary | 14 |
| 34. | | | activate | 13 |
| 35. | | | career | 13 |
| 36. | | | concrete | 13 |
| 37. | | | fridge | 13 |
| 38. | | | mould | 13 |
| 39. | | | pie | 13 |
| 40. | | | column | 12 |
| 41. | | | emit | 12 |
| 42. | | | oblige | 11 |
| 43. | | | gear | 11 |
| 44. | | | generate | 11 |
| 45. | | | install | 11 |
| 46. | Richard | | | 11 |
| 47. | | | solar | 11 |
| 48. | | | tank | 11 |
| 49. | | | appliance | 10 |
| 50. | | | capacity | 10 |
| 51. | | | gadget | 10 |
| 52. | | | household | 10 |

Table 14 (Continued)

| NO. | Word Families | | | Occurrences |
|-----|---------------|-----------|---------------|-------------|
| | Proper | Technical | Low Frequency | |
| 53. | | | navigate | 10 |
| 54. | | petroleum | | 10 |
| 55. | | | processor | 10 |
| 56. | | voltage | | 10 |
| 57. | | | will | 10 |
| 58. | | | bracket | 9 |
| 59. | | | comma | 9 |
| 60. | | | compress | 9 |
| 61. | | | condense | 9 |
| 62. | | | counter | 9 |
| 63. | | | evaporate | 9 |
| 64. | London | | | 9 |
| 65. | | | marine | 9 |
| 66. | | | pronunciation | 9 |
| 67. | | | technician | 9 |
| 68. | | | telecom | 8 |
| 69. | | | adverb | 8 |
| 70. | | | airport | 8 |
| 71. | | | amplify | 8 |
| 72. | | | extinguisher | 8 |
| 73. | | | keyword | 8 |
| 74. | | | magnet | 8 |
| 75. | | | memo | 8 |
| 76. | | | pilot | 8 |
| 77. | | | pollute | 8 |

Table 14 (Continued)

| NO. | Word Families | | | Occurrences |
|------|---------------|-----------|---------------|-------------|
| | Proper | Technical | Low Frequency | |
| 78. | | | radar | 8 |
| 79. | | | superlative | 8 |
| 80. | | | vibrate | 8 |
| 81. | | | alarm | 7 |
| 82. | | | cable | 7 |
| 83. | Calum | | | 7 |
| 84. | | | caterpillar | 7 |
| 85. | | | clipboard | 7 |
| 86. | | | condition | 7 |
| 87. | | fiber | | 7 |
| 88. | | | infrared | 7 |
| 89. | | | mobile | 7 |
| 90. | | | model | 7 |
| 91. | | | remote | 7 |
| 92. | | | sewage | 7 |
| 93. | | | spray | 7 |
| 94. | | | underground | 7 |
| 95. | | | webquest | 7 |
| 96. | | | absorb | 6 |
| 97. | | | acoustic | 6 |
| 98. | | | boom | 6 |
| 99. | | borehole | | 6 |
| 100. | | cellulose | | 6 |

According to Table 14, words appeared in all sub-groups (Technical, Proper, and Low Frequency). It also reveals that low frequency words still play a vital role in the 'Other' list. Likewise, 14 technical words were also found in the 100 most

frequent vocabulary items in the list. Interestingly, the first most frequent words from ‘Other’ list in both RSU1 corpus and RSU is the same word: “*plastic*” (See Table 11 and Table 14). The word ‘*plastic*’ occurred 48 times in the RSU corpus while it occurred 99 times in the RSU1 corpus.

Table 15 Overlapping AWL Words in RSU and RSU1

| No. | word | No. | word | No. | word | No. | word |
|-----|-------------|-----|--------------|-----|------------|-----|-------------|
| 1. | access | 24. | challenge | 47. | contact | 70. | energy |
| 2. | accurate | 25. | chart | 48. | context | 71. | ensure |
| 3. | acknowledge | 26. | chemical | 49. | contract | 72. | environment |
| 4. | adapt | 27. | civil | 50. | contribute | 73. | equip |
| 5. | adjust | 28. | clarify | 51. | convene | 74. | error |
| 6. | affect | 29. | clause | 52. | convert | 75. | estimate |
| 7. | aid | 30. | code | 53. | core | 76. | evaluate |
| 8. | alternative | 31. | collapse | 54. | create | 77. | eventual |
| 9. | analyze | 32. | colleague | 55. | credit | 78. | expand |
| 10. | annual | 33. | comment | 56. | cycle | 79. | expert |
| 11. | appropriate | 34. | communicate | 57. | data | 80. | expose |
| 12. | approximate | 35. | compatible | 58. | define | 81. | extract |
| 13. | area | 36. | complex | 59. | definite | 82. | feature |
| 14. | assemble | 37. | component | 60. | design | 83. | file |
| 15. | assess | 38. | compound | 61. | detect | 84. | final |
| 16. | assure | 39. | compute | 62. | device | 85. | flexible |
| 17. | attach | 40. | conduct | 63. | dimension | 86. | format |
| 18. | authority | 41. | confer | 64. | display | 87. | foundation |
| 19. | automate | 42. | consequent | 65. | dispose | 88. | framework |
| 20. | available | 43. | considerable | 66. | document | 89. | function |
| 21. | benefit | 44. | consist | 67. | domestic | 90. | generate |
| 22. | brief | 45. | constant | 68. | element | 91. | globe |
| 23. | capacity | 46. | consult | 69. | emphasis | 92. | guarantee |

Table 15 (Continued)

| No. | word | No. | word | No. | word | No. | word |
|------------|-------------|------------|-------------|------------|--------------|------------|-------------|
| 91. | globe | 118. | layer | 145. | overseas | 172. | relevant |
| 92. | guarantee | 119. | lecture | 146. | panel | 173. | remove |
| 93. | identify | 120. | legal | 147. | paragraph | 174. | require |
| 94. | image | 121. | license | 148. | partner | 175. | research |
| 95. | impact | 122. | Link | 149. | passive | 176. | respond |
| 96. | incidence | 123. | locate | 150. | percent | 177. | restrict |
| 97. | indicate | 124. | logic | 151. | period | 178. | revise |
| 98. | individual | 125. | maintain | 152. | physical | 179. | role |
| 99. | induce | 126. | major | 153. | plus | 180. | route |
| 100. | injure | 127. | maximize | 154. | positive | 181. | schedule |
| 101. | innovate | 128. | mechanism | 155. | precede | 182. | scheme |
| 102. | input | 129. | media | 156. | precise | 183. | section |
| 103. | inspect | 130. | medical | 157. | predict | 184. | sector |
| 104. | institute | 131. | method | 158. | previous | 185. | secure |
| 105. | instruct | 132. | military | 159. | prior | 186. | secure |
| 106. | integrate | 133. | mode | 160. | process | 187. | seek |
| 107. | intense | 134. | modify | 161. | professional | 188. | select |
| 108. | interact | 135. | monitor | 162. | project | 189. | sequence |
| 109. | internal | 136. | motive | 163. | promote | 190. | series |
| 110. | interpret | 137. | negate | 164. | prospect | 191. | shift |
| 111. | invest | 138. | network | 165. | range | 192. | similar |
| 112. | investigate | 139. | normal | 166. | ratio | 193. | site |
| 113. | involve | 140. | nuclear | 167. | react | 194. | source |
| 114. | issue | 141. | obtain | 168. | regulate | 195. | specific |
| 115. | Item | 142. | obvious | 169. | reinforce | 196. | strategy |
| 116. | Job | 143. | occur | 170. | relax | 197. | stress |
| 117. | label | 144. | output | 171. | release | 198. | structure |

Table 15 (Continued)

| No. | word | No. | word | No. | word | No. | word |
|------|------------|------|------------|------|-----------|------|-----------|
| 199. | sufficient | 206. | team | 213. | transfer | 220. | vehicle |
| 200. | summary | 207. | technical | 214. | transmit | 221. | version |
| 201. | suspend | 208. | technology | 215. | transport | 222. | visible |
| 202. | symbol | 209. | temporary | 216. | trend | 223. | vision |
| 203. | tape | 210. | text | 217. | trigger | 224. | visual |
| 204. | target | 211. | topic | 218. | unique | 225. | voluntary |
| 205. | task | 212. | tradition | 219. | vary | 226. | whereas |

**An Analysis of English for Engineering Classroom Material Used by
Rajamangala University of Technology Students (RMUT Corpus)**

Table 16 Word Families, Frequency and Coverage in RMUT Corpus

| Words Groups | Word Families | Word Occurrences | Coverage |
|--------------|---------------|------------------|-------------|
| GSL | 685 | 6,324 | 83.15% |
| AWL | 113 | 427 | 5.61% |
| Other | ? | 850 | 11.24% |
| Total | 798+? | 7,606 | 100% |

Table 17 The Commonly Occurring AWL Words with Their Frequencies in RMUT Corpus

| Word Families | Occurrences | Word Families | Occurrences |
|---------------|-------------|----------------|-------------|
| 1. accurate | 2 | 6. approximate | 9 |
| 2. achieve | 2 | 7. area | 4 |
| 3. adapt | 2 | 8. automate | 4 |
| 4. adjust | 2 | 9. available | 2 |
| 5. analyze | 1 | 10. category | 4 |

Table 17 (Continued)

| | Word Families | Occurrences | Word Families | Occurrences | |
|-----|----------------------|--------------------|----------------------|--------------------|----|
| 11. | chemical | 8 | 39. | environment | 1 |
| 12. | clarify | 1 | 40. | equip | 14 |
| 13. | classic | 1 | 41. | eventual | 2 |
| 14. | commodity | 2 | 42. | exceed | 1 |
| 15. | complex | 4 | 43. | expand | 1 |
| 16. | component | 1 | 44. | factor | 3 |
| 17. | comprise | 1 | 45. | feature | 8 |
| 18. | compute | 16 | 46. | final | 9 |
| 19. | considerable | 3 | 47. | function | 2 |
| 20. | consist | 3 | 48. | fundamental | 1 |
| 21. | constant | 5 | 49. | globe | 2 |
| 22. | contact | 2 | 50. | goal | 2 |
| 23. | contrast | 7 | 51. | identify | 4 |
| 24. | contribute | 1 | 52. | imply | 1 |
| 25. | convert | 2 | 53. | indicate | 1 |
| 26. | create | 2 | 54. | initial | 2 |
| 27. | criteria | 4 | 55. | input | 7 |
| 28. | crucial | 1 | 56. | insert | 6 |
| 29. | cycle | 4 | 57. | inspect | 1 |
| 30. | define | 21 | 58. | instance | 2 |
| 31. | denote | 1 | 59. | instruct | 14 |
| 32. | design | 1 | 60. | internal | 3 |
| 33. | despite | 1 | 61. | investigate | 1 |
| 34. | device | 6 | 62. | involve | 2 |
| 35. | distribute | 1 | 63. | issue | 1 |
| 36. | edit | 2 | 64. | item | 1 |
| 37. | element | 5 | 65. | job | 1 |
| 38. | energy | 8 | 66. | logic | 1 |

Table 17 (Continued)

| | Word Families | Occurrences | Word Families | Occurrences | |
|-----|----------------------|--------------------|----------------------|--------------------|----|
| 67. | maintain | 6 | 88. | refine | 3 |
| 68. | major | 5 | 89. | rely | 3 |
| 69. | manual | 1 | 90. | remove | 11 |
| 70. | method | 2 | 91. | require | 3 |
| 71. | monitor | 8 | 92. | research | 1 |
| 72. | negate | 1 | 93. | respond | 1 |
| 73. | nevertheless | 1 | 94. | section | 1 |
| 74. | nuclear | 1 | 95. | sequence | 5 |
| 75. | occur | 2 | 96. | series | 1 |
| 76. | output | 3 | 97. | similar | 21 |
| 77. | panel | 1 | 98. | site | 1 |
| 78. | partner | 1 | 99. | source | 8 |
| 79. | passive | 11 | 100. | specific | 4 |
| 80. | period | 1 | 101. | stress | 1 |
| 81. | phenomenon | 1 | 102. | structure | 5 |
| 82. | positive | 5 | 103. | subsequent | 1 |
| 83. | potential | 2 | 104. | task | 5 |
| 84. | proceed | 1 | 105. | technology | 21 |
| 85. | process | 18 | 106. | text | 2 |
| 86. | proportion | 1 | 107. | transform | 1 |
| 87. | publish | 1 | 108. | transit | 2 |

Table 18 The 100 Most Frequent Words from the “Other” List in RMUT Corpus

| NO. | Word Families | | | Occurrences |
|------------|----------------------|------------------|----------------------|--------------------|
| | Proper | Technical | Low Frequency | |
| 1. | Venus | | | 29 |
| 2. | | | greenhouse | 22 |

Table 18 (Continued)

| NO. | Word Families | | | Occurrences |
|-----|---------------|------------|---------------|-------------|
| | Proper | Technical | Low Frequency | |
| 3. | Venus | | | 29 |
| 4. | | | greenhouse | 22 |
| 5. | | plastic | | 19 |
| 6. | | | sub | 14 |
| 7. | | | density | 15 |
| 8. | | cellulose | | 12 |
| 9. | | | robot | 12 |
| 10. | | | bark | 9 |
| 11. | | | cast | 9 |
| 12. | | diesel | | 9 |
| 13. | | | pulp | 9 |
| 14. | | atmosphere | | 8 |
| 15. | | battery | | 8 |
| 16. | | | diagram | 8 |
| 17. | | | syllable | 8 |
| 18. | | | cable | 7 |
| 19. | | | clockwise | 7 |
| 20. | | | adverb | 6 |
| 21. | | atom | | 6 |
| 22. | | carbon | | 6 |
| 23. | | dioxide | | 6 |
| 24. | | | fuel | 6 |
| 25. | Mars | | | 6 |
| 26. | | mercury | | 6 |
| 27. | | aluminum | | 5 |
| 28. | | | chip | 5 |

Table 18 (Continued)

| NO. | Word Families | | | Occurrences |
|-----|---------------|-----------|---------------|-------------|
| | Proper | Technical | Low Frequency | |
| 29. | | | column | 5 |
| 30. | | conductor | | 5 |
| 31. | | electron | | 5 |
| 32. | | gasoline | | 5 |
| 33. | | | graph | 5 |
| 34. | | | papermaking | 5 |
| 35. | | | polymer | 5 |
| 36. | | | protein | 5 |
| 37. | | | solar | 5 |
| 38. | | | spark | 5 |
| 39. | | | synthetic | 5 |
| 40. | | | absorb | 4 |
| 41. | | | adjective | 4 |
| 42. | | | boot | 4 |
| 43. | | | consonant | 4 |
| 44. | | | debark | 4 |
| 45. | | | electronic | 4 |
| 46. | | fiber | | 4 |
| 47. | | | fluid | 4 |
| 48. | | | ignite | 4 |
| 49. | Jupiter | | | 4 |
| 50. | | nuclear | | 4 |
| 51. | | nylon | | 4 |
| 52. | | planet | | 4 |
| 53. | | | plug | 4 |
| 54. | | | recycle | 4 |

Table 18 (Continued)

| NO. | Word Families | | | Occurrences |
|-----|---------------|--------------|---------------|-------------|
| | Proper | Technical | Low Frequency | |
| 55. | | socket | | 4 |
| 56. | | | superlative | 4 |
| 57. | | zinc | | 4 |
| 58. | | | atmosphere | 3 |
| 59. | | | bleach | 3 |
| 60. | | | breaker | 3 |
| 61. | | | dehydrate | 3 |
| 62. | | nitrate | | 3 |
| 63. | | petrol | | 3 |
| 64. | | phenol | | 3 |
| 65. | | reptile | | 3 |
| 66. | | resin | | 3 |
| 67. | | saturn | | 3 |
| 68. | | thermometer | | 3 |
| 69. | | thumbscrew | | 3 |
| 70. | | vertebrate | | 3 |
| 71. | | | web | 3 |
| 72. | | | alcoholic | 2 |
| 73. | | antenna | | 2 |
| 74. | | | appliance | 2 |
| 75. | | barometer | | 2 |
| 76. | | | blanket | 2 |
| 77. | | carbohydrate | | 2 |
| 78. | | | conduct | 2 |
| 79. | | | connect | 2 |
| 80. | | | counter | 2 |
| 81. | | | digest | 2 |

Table 18 (Continued)

| NO. | Word Families | | | Occurrences |
|-----|---------------|------------|----------------|-------------|
| | Proper | Technical | Low Frequency | |
| 82. | | | discourse | 2 |
| 83. | | | fill | 2 |
| 84. | | | gear | 2 |
| 85. | | | goods | 2 |
| 86. | | | grain | 2 |
| 87. | | | handset | 2 |
| 88. | | | hose | 2 |
| 89. | | hydrogen | | 2 |
| 90. | | | infinitive | 2 |
| 91. | | | insulate | 2 |
| 92. | | len | | 2 |
| 93. | | | modify | 2 |
| 94. | | molecule | | 2 |
| 95. | Neptune | | | 2 |
| 96. | | nickel | | 2 |
| 97. | | | overproduction | 2 |
| 98. | | proton | | 2 |
| 99. | | | resemble | 2 |
| 100 | | screwdrive | | 2 |

From the most common 100 words in the 'Other' list in the RMUT corpus, the majority (49%) of them still fall into the Low Frequency group. Interestingly, 38 technical words are found in the list. That is, the list contains the highest number of technical words compared to the same list from other corpora. However, four proper nouns are also found which are *Venus*, *Mars*, *Jupiter* and *Neptune*.

The following words are 108 AWL words which were not found in the studied texts.

| | | | |
|--------------|-----------------|---------------|-----------------|
| add | implicate | anticipate | implicit |
| administrate | incentive | append | inhibit |
| advocate | incline | attribute | insight |
| aggregate | inevitable | attribute | intrinsic |
| albeit | infrastructure | cease | invoke |
| ambiguous | notion | classic | legislate |
| arbitrary | notwithstanding | commit | levy |
| attain | orient | conceive | liberal |
| behalf | parameter | concurrent | likewise |
| chapter | philosophy | conform | mediate |
| cite | practitioner | constrain | migrate |
| commence | preliminary | contradict | minimal |
| compile | presume | controversy | ministry |
| complement | publication | converse | neutral |
| consent | qualitative | deduce | norm |
| contemporary | quote | devote | objective |
| currency | regime | differentiate | offset |
| diverse | reluctance | diminish | policy |
| ethic | sex | domain | psychology |
| ethnic | submit | empirical | resolve |
| fee | theme | enforce | so-called |
| forthcoming | thesis | entity | sole |
| furthermore | whereby | erode | status |
| gender | abandon | establish | straightforward |
| hierarchy | allocate | explicit | subsidy |
| ignorance | amend | exploit | violate |
| immigrate | analogy | ideology | whereby |

Table 19 The Corpus of Academic Word List in English from the Studied Engineering Courses with Their Frequencies

| | Word Families | Occurrences | Word Families | Occurrences | |
|-----|----------------------|--------------------|----------------------|--------------------|----|
| 1. | abstract | 8 | 28. | approximate | 20 |
| 2. | academy | 4 | 29. | area | 85 |
| 3. | access | 13 | 30. | aspect | 6 |
| 4. | accommodate | 9 | 31. | assemble | 24 |
| 5. | accompany | 2 | 32. | assess | 43 |
| 6. | accumulate | 1 | 33. | assign | 2 |
| 7. | accurate | 32 | 34. | assist | 7 |
| 8. | achieve | 13 | 35. | assume | 2 |
| 9. | acknowledge | 5 | 36. | assure | 3 |
| 10. | acquire | 3 | 37. | attach | 11 |
| 11. | adapt | 14 | 38. | attitude | 1 |
| 12. | adequate | 2 | 39. | author | 1 |
| 13. | adjacent | 4 | 40. | authority | 2 |
| 14. | adjust | 14 | 41. | automate | 32 |
| 15. | adult | 1 | 42. | available | 28 |
| 16. | affect | 14 | 43. | aware | 6 |
| 17. | aid | 12 | 44. | benefit | 9 |
| 18. | alter | 7 | 45. | bias | 1 |
| 19. | alternative | 23 | 46. | bond | 13 |
| 20. | analyze | 17 | 47. | brief | 23 |
| 21. | annual | 4 | 48. | bulk | 3 |
| 22. | anticipate | 1 | 49. | capable | 9 |
| 23. | apparent | 2 | 50. | capacity | 28 |
| 24. | append | 2 | 51. | category | 11 |
| 25. | appreciate | 1 | 52. | challenge | 14 |
| 26. | approach | 14 | 53. | channel | 7 |
| 27. | appropriate | 36 | 54. | chapter | 2 |

Table 19 (Continued)

| | Word Families | Occurrences | Word Families | Occurrences | |
|-----|----------------------|--------------------|----------------------|--------------------|----|
| 55. | chart | 52 | 83. | conduct | 14 |
| 56. | chemical | 90 | 84. | confer | 4 |
| 57. | circumstance | 3 | 85. | confine | 1 |
| 58. | civil | 28 | 86. | confirm | 5 |
| 59. | clarify | 6 | 87. | conflict | 3 |
| 60. | classic | 1 | 88. | consequent | 11 |
| 61. | clause | 99 | 89. | considerable | 12 |
| 62. | code | 9 | 90. | consist | 42 |
| 63. | coherent | 6 | 91. | constant | 14 |
| 64. | coincide | 3 | 92. | constitute | 5 |
| 65. | collapse | 5 | 93. | construct | 59 |
| 66. | colleague | 5 | 94. | consult | 6 |
| 67. | comment | 9 | 95. | consume | 17 |
| 68. | commission | 1 | 96. | contact | 21 |
| 69. | commodity | 2 | 97. | context | 21 |
| 70. | communicate | 78 | 98. | contract | 10 |
| 71. | community | 7 | 99. | contrast | 28 |
| 72. | compatible | 4 | 100. | contribute | 10 |
| 73. | compensate | 2 | 101. | convene | 34 |
| 74. | complex | 22 | 102. | convert | 40 |
| 75. | component | 98 | 103. | convince | 4 |
| 76. | compound | 21 | 104. | cooperate | 5 |
| 77. | comprehensive | 1 | 105. | coordinate | 8 |
| 78. | comprise | 6 | 106. | core | 6 |
| 79. | compute | 170 | 107. | corporate | 1 |
| 80. | concentrate | 6 | 108. | couple | 2 |
| 81. | concept | 5 | 109. | create | 46 |
| 82. | conclude | 8 | 110. | credit | 7 |

Table 19 (Continued)

| Word Families | Occurrences | Word Families | Occurrences |
|----------------------|--------------------|----------------------|--------------------|
| 111. criteria | 6 | 139. distribute | 8 |
| 112. crucial | 1 | 140. document | 8 |
| 113. culture | 2 | 141. domestic | 16 |
| 114. cycle | 14 | 142. dominate | 1 |
| 115. data | 33 | 143. draft | 4 |
| 116. debate | 1 | 144. drama | 3 |
| 117. decade | 2 | 145. duration | 2 |
| 118. decline | 1 | 146. dynamic | 2 |
| 119. define | 47 | 147. economy | 16 |
| 120. definite | 6 | 148. edit | 8 |
| 121. demonstrate | 4 | 149. element | 30 |
| 122. denote | 2 | 150. eliminate | 9 |
| 123. deny | 2 | 151. emphasis | 18 |
| 124. depress | 1 | 152. enable | 21 |
| 125. derive | 17 | 153. encounter | 4 |
| 126. design | 270 | 154. energy | 149 |
| 127. despite | 4 | 155. enhance | 2 |
| 128. detect | 56 | 156. enormous | 1 |
| 129. deviate | 1 | 157. ensure | 10 |
| 130. device | 96 | 158. environment | 81 |
| 131. dimension | 52 | 159. equate | 2 |
| 132. discrete | 1 | 160. equip | 115 |
| 133. discriminate | 8 | 161. equivalent | 2 |
| 134. displace | 3 | 162. erode | 3 |
| 135. display | 16 | 163. error | 5 |
| 136. dispose | 22 | 164. establish | 2 |
| 137. distinct | 7 | 165. estate | 2 |
| 138. distort | 1 | 166. estimate | 7 |

Table 19 (Continued)

| Word Families | Occurrences | Word Families | Occurrences |
|----------------------|--------------------|----------------------|--------------------|
| 167. evaluate | 10 | 195. framework | 6 |
| 168. eventual | 6 | 196. function | 65 |
| 169. evident | 3 | 197. fund | 1 |
| 170. evolve | 1 | 198. fundamental | 2 |
| 171. exceed | 2 | 199. generate | 28 |
| 172. exclude | 4 | 200. generation | 7 |
| 173. exhibit | 2 | 201. globe | 21 |
| 174. expand | 20 | 202. goal | 4 |
| 175. expert | 4 | 203. grade | 4 |
| 176. export | 4 | 204. grant | 1 |
| 177. expose | 20 | 205. guarantee | 3 |
| 178. external | 13 | 206. guideline | 8 |
| 179. extract | 13 | 207. hence | 3 |
| 180. facilitate | 3 | 208. highlight | 1 |
| 181. factor | 8 | 209. hypothesis | 4 |
| 182. feature | 36 | 210. identical | 1 |
| 183. federal | 3 | 211. identify | 29 |
| 184. file | 22 | 212. illustrate | 20 |
| 185. final | 40 | 213. image | 23 |
| 186. finance | 16 | 214. impact | 37 |
| 187. finite | 1 | 215. implement | 2 |
| 188. flexible | 25 | 216. imply | 2 |
| 189. fluctuate | 2 | 217. impose | 1 |
| 190. focus | 58 | 218. incidence | 7 |
| 191. format | 6 | 219. income | 2 |
| 192. formula | 1 | 220. incorporate | 4 |
| 193. foundation | 16 | 221. index | 3 |
| 194. founded | 2 | 222. indicate | 33 |

Table 19 (Continued)

| | Word Families | Occurrences | Word Families | Occurrences |
|------|----------------------|--------------------|----------------------|--------------------|
| 223. | individual | 11 | 251. issue | 11 |
| 224. | induce | 5 | 252. item | 44 |
| 225. | infer | 10 | 253. job | 178 |
| 226. | inherent | 2 | 254. journal | 3 |
| 227. | initial | 7 | 255. justify | 2 |
| 228. | initiate | 8 | 256. label | 27 |
| 229. | injure | 33 | 257. labor | 2 |
| 230. | innovate | 11 | 258. layer | 19 |
| 231. | input | 35 | 259. lecture | 7 |
| 232. | insert | 10 | 260. legal | 16 |
| 233. | inspect | 47 | 261. license | 6 |
| 234. | instance | 2 | 262. link | 75 |
| 235. | institute | 3 | 263. locate | 36 |
| 236. | instruct | 93 | 264. logic | 11 |
| 237. | integral | 3 | 265. maintain | 55 |
| 238. | integrate | 7 | 266. major | 22 |
| 239. | intelligence | 4 | 267. manipulate | 1 |
| 240. | intense | 6 | 268. manual | 9 |
| 241. | interact | 3 | 269. margin | 1 |
| 242. | intermediate | 1 | 270. mature | 4 |
| 243. | internal | 15 | 271. maximize | 38 |
| 244. | interpret | 4 | 272. mechanism | 17 |
| 245. | interval | 1 | 273. media | 22 |
| 246. | intervene | 1 | 274. medical | 22 |
| 247. | invest | 17 | 275. medium | 4 |
| 248. | investigate | 11 | 276. mental | 4 |
| 249. | involve | 53 | 277. method | 36 |
| 250. | isolate | 7 | 278. military | 9 |

Table 19 (Continued)

| | Word Families | Occurrences | Word Families | Occurrences | |
|------|----------------------|--------------------|----------------------|--------------------|-----|
| 279. | minimize | 7 | 307. | partner | 84 |
| 280. | minimum | 6 | 308. | passive | 86 |
| 281. | minor | 5 | 309. | perceive | 2 |
| 282. | mode | 10 | 310. | percent | 21 |
| 283. | modify | 15 | 311. | period | 23 |
| 284. | monitor | 42 | 312. | persist | 1 |
| 285. | motive | 7 | 313. | perspective | 1 |
| 286. | mutual | 1 | 314. | phase | 1 |
| 287. | negate | 36 | 315. | phenomenon | 4 |
| 288. | network | 43 | 316. | physical | 22 |
| 289. | nevertheless | 8 | 317. | plus | 34 |
| 290. | nonetheless | 1 | 318. | portion | 1 |
| 291. | normal | 19 | 319. | pose | 2 |
| 292. | nuclear | 16 | 320. | positive | 44 |
| 293. | obtain | 11 | 321. | potential | 15 |
| 294. | obvious | 4 | 322. | precede | 4 |
| 295. | occupy | 3 | 323. | precise | 9 |
| 296. | occur | 19 | 324. | predict | 38 |
| 297. | option | 4 | 325. | predominant | 1 |
| 298. | outcome | 4 | 326. | previous | 7 |
| 299. | output | 24 | 327. | primary | 15 |
| 300. | overall | 2 | 328. | prime | 3 |
| 301. | overlap | 1 | 329. | principal | 2 |
| 302. | overseas | 3 | 330. | principle | 4 |
| 303. | panel | 14 | 331. | prior | 4 |
| 304. | paragraph | 61 | 332. | priority | 1 |
| 305. | parallel | 6 | 333. | proceed | 14 |
| 306. | participate | 2 | 334. | process | 180 |

Table 19 (Continued)

| Word Families | Occurrences | Word Families | Occurrences |
|----------------------|--------------------|----------------------|--------------------|
| 335. professional | 10 | 363. research | 40 |
| 336. prohibit | 1 | 364. reside | 2 |
| 337. project | 54 | 365. resolve | 1 |
| 338. promote | 4 | 366. resource | 12 |
| 339. proportion | 8 | 367. respond | 16 |
| 340. prospect | 3 | 368. restore | 2 |
| 341. protocol | 2 | 369. restrain | 4 |
| 342. publish | 2 | 370. restrict | 4 |
| 343. purchase | 3 | 371. retain | 7 |
| 344. pursue | 1 | 372. reveal | 3 |
| 345. radical | 1 | 373. revenue | 1 |
| 346. random | 3 | 374. reverse | 8 |
| 347. range | 51 | 375. revise | 3 |
| 348. ratio | 15 | 376. revolution | 10 |
| 349. react | 10 | 377. rigid | 3 |
| 350. recover | 8 | 378. role | 19 |
| 351. refine | 17 | 379. route | 13 |
| 352. region | 2 | 380. scenario | 2 |
| 353. register | 1 | 381. schedule | 6 |
| 354. regulate | 17 | 382. scheme | 5 |
| 355. reinforce | 13 | 383. scope | 3 |
| 356. reject | 1 | 384. section | 36 |
| 357. relax | 3 | 385. sector | 16 |
| 358. release | 29 | 386. secure | 27 |
| 359. relevant | 7 | 387. seek | 4 |
| 360. rely | 11 | 388. select | 18 |
| 361. remove | 64 | 389. sequence | 26 |
| 362. require | 113 | 390. series | 18 |

Table 19 (Continued)

| | Word Families | Occurrences | Word Families | Occurrences | |
|------|----------------------|--------------------|----------------------|--------------------|-----|
| 391. | shift | 5 | 419. | sustain | 11 |
| 392. | significant | 18 | 420. | symbol | 42 |
| 393. | similar | 51 | 421. | tape | 7 |
| 394. | simulate | 8 | 422. | target | 11 |
| 395. | site | 54 | 423. | task | 40 |
| 396. | sole | 1 | 424. | team | 26 |
| 397. | somewhat | 5 | 425. | technical | 68 |
| 398. | source | 56 | 426. | technique | 6 |
| 399. | specific | 26 | 427. | technology | 248 |
| 400. | specify | 5 | 428. | temporary | 4 |
| 401. | sphere | 2 | 429. | tense | 36 |
| 402. | stable | 23 | 430. | terminate | 2 |
| 403. | statistic | 5 | 431. | text | 176 |
| 404. | strategy | 4 | 432. | theory | 2 |
| 405. | stress | 50 | 433. | thereby | 1 |
| 406. | structure | 64 | 434. | topic | 29 |
| 407. | style | 2 | 437. | trace | 1 |
| 408. | subordinate | 3 | 436. | tradition | 6 |
| 409. | subsequent | 2 | 437. | transfer | 34 |
| 410. | substitute | 1 | 438. | transform | 3 |
| 411. | successor | 1 | 439. | transit | 5 |
| 412. | sufficient | 10 | 440. | transmit | 34 |
| 413. | sum | 12 | 441. | transport | 62 |
| 414. | summary | 16 | 442. | trend | 11 |
| 415. | supplement | 1 | 443. | trigger | 15 |
| 416. | survey | 9 | 444. | ultimate | 4 |
| 417. | survive | 6 | 445. | undergo | 4 |
| 418. | suspend | 14 | 446. | undertake | 2 |

Table 19 (Continued)

| Word Families | Occurrences | Word Families | Occurrences |
|----------------------|--------------------|----------------------|--------------------|
| 447. uniform | 3 | 456. virtual | 4 |
| 448. unify | 2 | 457. visible | 17 |
| 449. unique | 10 | 458. vision | 5 |
| 450. utilize | 2 | 459. visual | 11 |
| 451. valid | 1 | 460. volume | 17 |
| 452. vary | 19 | 461. voluntary | 2 |
| 453. vehicle | 73 | 462. whereas | 9 |
| 454. version | 11 | 463. widespread | 2 |
| 455. via | 8 | | |

CHAPTER V

CONCLUSION AND DISCUSSIONS

This chapter presents conclusion of the results of the study in relation to discussions, limitations of the study, and recommendation of further study.

Conclusions

An analysis of vocabulary input in English for Engineering courses at Thammasart University, Rangsit University and Rajamangala University of Technology was carried out to investigate if the English for Engineering course materials used in universities provide the right vocabulary for their students.

The materials analyzed in this study were printed materials from those universities offering English for Engineering courses in 2009-2010 academic years. All printed course materials were scanned and exported to texts. After that, printed course materials were created as a separate corpus in order to be analyzed by lexical software program (WordSmith Tools). Vocabularies in each corpus were categorized into three groups of words: the GSL, the AWL, and the 'Other'. Words in the 'Others' are the words that do not occur in the GSL and the AWL and they are divided into three sub-groups: Proper, Technical, and Low Frequency.

The results of the study showed that English for Engineering course used for first year students at Thammasart, Rangsit, and Rajamangala University had a primary emphasis of vocabulary input on high frequency vocabulary or GSL words. Similarly, the GSL still played the most key role in the printed course materials for Engineering students used in the second year. Moreover, the majority of GSL words from the findings occurring in the second year material are a repetition of GSL words in first year textbooks. Moreover, the first 1000 words of the GSL frequently occurring in the GSL were mostly used in Engineering course materials for both first and second year. In addition, GSL words in the study cover nearly three fourths (1,591) of the words in

the GSL. It indicated that if Engineering students learned and know these general service words, they will be able to understand over 80% of any texts (West, 1953). In terms of AWL words, they are introduced to students in the first year in all universities. In the same way to GSL words, some of AWL words provided for second year Engineering students have already been confronted in the first year course materials. However, a number of unseen AWL words were inserted in course materials used in the second year. It can be said that Engineering students acquired more new AWL words that are essential for their academic study.

The relationship between textbooks used in the first and the second academic year implied that vocabulary input in English for the first year Engineering students in every university was taught as a foundation in order to provide students with basic words (GSL vocabularies) and some frequent occurring AWL words that could assist students in reading academic texts.

Discussions

The results of the study clearly revealed that words from the General Service List played a key role in teaching and learning materials used in English for Engineering courses at Rangsit University, Thammasart University and Rajamangala University of Technology. The majority (around 80%) of corpora were comprised of vocabulary items from the GSL. (83.29% of TU, 78.16% of TU1, 84.28% of RSU, 84.13% of RSU1, and 83.15% of RMUT). These results are in agreement with Nation (2001) that high frequency words in the GSL provide over 80% text coverage of most types of reading texts. A number of studies such as Laufer and Nation (1995), Kennedy (1998), and Worthington and Nation (1996), and so on also made the same findings regarding the coverage of GSL words in different texts.

In addition, the results showed that the classroom material used in the first year (84.28%) and classroom material used in the second year (84.13%) from Rangsit University contained the most coverage by the GSL. The reason is that most of the contexts are in the form of reading passages which students are provided with, to

expose them to innovation in technology and other fields relevant to their future careers. In order to gain the best comprehension while they are reading, students need to be familiar with words in the GSL as much as possible (Nation, 2001). The findings from the study reveal that GSL words account for approximately 80% of all running words in course materials. In other words, the majority of running words appearing in all corpora are words from the GSL.

Not all of the GSL words were found in these analyses of the different corpora. As for the GSL comprising 2,284,693 out of the total number of the list never occurred in the study, almost all of them were content words (nouns, adjectives, verbs) such as *ability, action, actor allowance, appearance* and so on. However, not many function words were found, such as *amongst anybody anyhow anyone anything anyway* and so on. This does not mean that these 693 words are not high frequency words. On the contrary, they may occur often in other text disciplines, like in works of fiction, since the GSL was created from several collections of texts (West, 1953).

Nevertheless, the GSL is still beneficial for the students to understand any course materials. The more of these basic words that students know, the more they will understand the texts. This raises the question of whether the students entering the universities already know the 2000 common words in English that make up the GSL. The evidence from the analysis suggests that course designers have not completed this assumption due to considerable proportion of the disappearance of GSL words.

Coxhead (1998) claimed that the 570 AWL words should appear approximately 10 % of tokens in an academic text. In other words, after acquiring GSL words, knowing academic words should be the subsequent goal for a learner wishing to undertake further study in university where English is a requirement. Even though the 570 words seems to be a smaller number when compared to the GSL list, they are comprised of their families which provide much larger number than the GSL words. Consequently, acquiring both the GSL and the AWL would allow the reader to comprehend over 90% coverage of the running words in the majority of academic texts (Nation, 1990). From the study, the course materials for first and second year

students from Thammasart University gave the highest coverage by AWL words at 6.93% and 6.47% respectively. However, the results did not meet Coxhead's 10% coverage of academic texts. Moreover, the RU corpus and RMUT corpus were found to have the smallest coverage of AWL. One interesting aspect from the finding is that the AWL coverage from RU corpus (5.57%) and RMUT corpus (5.61%) are slightly different from each other, although the former's size is five times bigger than the latter's and it can consist of a greater number of AWL words. However, it can be explained that both of them have high coverage for the GSL words and 'Other' list words which are around 84% and 11 % respectively. It is obvious that both of these texts focus more on general vocabularies and technical words than AWL words.

To discuss in terms of absent AWL words, a total of 106 word families were not found in all corpora. Furthermore, it was found that the majority of them were comprised of words from the last five groups of AWL lists which are sublist 5 to sublist 10 (See Appendix C). This is because these groups of sublists consist of less frequently occurring words. From the study, only three AWL word families from sublist 1 and two AWL word families from sublist 2 were not found the corpora while there are twenty-one families from sublist 9 do not occur in any corpus (See Appendix C).

It can be explained that students or course designers should pay attention first to most frequently used vocabulary so that they will be less obstructed in their reading academic texts.

Apart from the GSL and the AWL that provide learners with around 90% coverage of academic texts, there are proper nouns, technical and low frequency words which are other essential factors allowing language learners better understanding in their reading. The study showed that technical words were introduced to students even in the first year courses. Most of them are words concerning equipments for Engineering or science terms e.g., *borehole*, *hydrogen*, *newton* and *zinc*. Moreover, they also encountered more technical vocabulary in the second academic year. So, students who are familiar with technical words and

understand how to handle them might have fewer difficulties when they encounter these words in the next year of their course of English for Engineering.

“What should be done with technical words?” is one question to which teachers should pay attention. It is generally believed that ESP teachers should not teach technical words as this will be covered by subject teachers (Read, 2000). A considerable number of technical words were found in the materials. This is, of course, unavoidable, given the nature of the texts used. As a result, teachers have to accept that some degree of knowledge of specific vocabulary and subject matter are required. In the case where science is common to all the students, teachers require background knowledge of an Engineering subject. Teachers without a relevant background should be able to prepare themselves to teach, though additional preparation time and willingness to take risks is required.

Not only did the results of the study show the vocabulary content of English for Engineering courses, but they also provided the information to see the vocabulary sequence in the courses in terms of word frequency. The results provided an insight into if words in the GSL were taught to Engineering students before moving to academic vocabulary.

At Thammasart University, the first year course material was comprised of a larger number of GSL words than the second year course material (See Table 2 and Table 5). TU students encountered most GSL words in their first year course contexts since the materials in the first year were prepared with the aim of training students in reading and writing skills as well as vocabulary learning strategies for effective reading. However, when students were in the second year, language in Engineering was strongly emphasized. Second year students thus met less of the GSL but a greater amount of the technical words and AWL words. More interestingly, there are large quantities of AWL and GSL words in the first year and second year which overlap each other. This suggests that the course materials for second year Engineering students become more academic, and vocabulary in the first year course material provided a basis for material the in second year.

Likewise, the course materials from Rangsit University seemed to be designed for students to learn basic words prior to more academic vocabulary items. However, the proportion of GSL words and AWL words between the first year and second year course materials are somewhat similar. According to Table 9 and Table 12, it is clear that RSU Engineering students were exposed to a large number of basic words for both their first and second academic years. It indicates that the course designers attempted to provide their students with basic words as much as they could because English for Engineering course materials were found to have the highest coverage of GSL words out of all the corpora in the study. In terms of AWL words, the proportion of AWL from RSU and RSU1 is slightly different from each other. Besides this, many overlapping AWL words from both corpora were found. It revealed that if students did not receive AWL words in first year course material, they might find it difficult to study further English for Engineering course in the next year.

Regarding the RMUT course material, it is the only one university in the study that provided students with English for Engineering course for the first academic year. Moreover, the size of its corpus is the smallest one. In other words, the course material contains the least number of both GSL and AWL words compared to others, and several GSL and AWL words disappeared from the corpus. Therefore, students also encounter less of both GSL and AWL vocabularies. However, this might cause some difficulties for RMUT Engineering students to read other English academic texts due to their limited GSL and AWL word knowledge. In conclusion, English for Engineering course at RMUT could need some modification in order to add more vocabulary items that are essential to students in further study. It could be done by incorporating more English for Engineering course material or providing Engineering students with more GSL and AWL words in the present course material because GSL words and AWL words are found with 90% of any academic texts (Coxhead, 1998 and West, 1953)

The analysis above reached the conclusion that there was an appropriate sequence of vocabulary input in English for Engineering course materials for the first and second year in Thammasart University and Rangsit University. However, text

from Rajamangala University of Technology should be slightly revised so as to provide the best advantage to Engineering students. A variety of research studies have suggested that high frequency words or words in the GSL should be taught to language students before they move on to do more academic or specific words (Nation, 2001).

With respect to the corpus of AWL words from the analysis, it emphasized that sublist 1 still consisted of the most frequent words in the list. The first ten most occurring of the corpus were *technology, process, job, compute, energy, equip, require, clause, communicate, and component* respectively. Moreover, it was found that none of these were in sublist 8 to sublist 10 (See Appendix C). This implied that academic words in sublist 1 should be the top priority which needs to be taught to students.

To conclude, the results gained from the analysis could be directly useful for teachers or course designers who wish to know what vocabulary is actually taught to Engineering students and if it is worth teaching and suitable for the students. The findings could also aid teacher to decide whether to retain or redesign the teaching materials. Besides, the analysis of corpora of teaching materials revealed what vocabulary was actually used in various sources of English for Engineering students. However, it was found that vocabulary in English courses was only the common vocabulary as a part of teaching and learning. Therefore, to make a qualified English course for Engineering students, a number of factors need to be considered. This study was conducted with the aim of contributing to the awareness for a course designer or a teacher to think about the vocabulary input when designing course materials for Engineering students as a part of English for specific purposes course design.

Limitations of the Study

Two limitations of the study should be highlighted. Firstly, the analysis of vocabulary content or input concentrated on word frequency only. The study did not focus on collocation (the group of words commonly occurring together) or polysemantic words (words with different meaning in different contexts).

A further limitation of the study is the size of the corpus or the total number of running words occurring in textbooks used in English for Engineering courses. Since materials used in the study coming from universities running English for Engineering courses, this resulted in the size of the corpus. Consequently, a size of approximately 120,000 running words was analyzed.

Recommendation for Further Study

In order to gain a deeper insight concerning vocabulary input in English for Engineering teaching materials, further study in similar topics should be focused not only on the frequency of a word but on its meanings since some vocabularies do not accompany one meaning, they accompany more when occur in other contexts. Accordingly, further study should examine vocabulary input in terms of words with different meanings in different contexts.

REFERENCES

- Adunyarittigun, D. 1999. An abstract: **What May Affect Your Students' Reading Success? ELT Collaboration: Towards Excellent in the New Millennium (the 4 TH CULI International Conference)**. Bangkok: Thailand.
- Alderson, J. 1984. **Reading: A Reading Problem or a Language?**. n.p. cited in Alderson J. C. and A.H. Urquhart (Eds). 1998. **Reading in a foreign language**. London: Longman.
- Allan, Q.G. 1999. Enhancing the language awareness of Hong Kong teachers through corpus data: The telenex experience. **Journal of Technology and Teacher Education**. n.p.
- Aston, G. 1997. **Small and Large Corpora in Language Learning** (Online). <http://home.sslmit.unibo.it/guy/wudj1.htm>, October 11, 2004
- Bauman, J. and B. Culligan. 1995. **General Service List** (Online). <http://plaza3.mbn.or.jp/bauman/gsl.html>, December 27, 2000.
- Bauer, L. and P. Nation. 1993. Word families. **International Journal of Lexicography**. 6: 253-279.
- Biber, D. *et al.* 1998. **The Longman Grammar of Written and Spoken English**. Longman.
- _____. 1990. **Methodology Issues Regarding Corpus-Based Analysis of Linguistic Variation**. Literary and Linguistic Computing.
- Chan-udom, P. 1993. **Problems of Teaching and Learning Foundation English in Kampaengpet Teacher College**. Master of Arts Thesis in Educations, Naresuan University.

- Cobb, T. 2000. **Conditions of Vocabulary Acquisition** (Online).
http://er.uqam.ca/nobel/r21270/cv/v_conditions.htm, May 26, 2001.
- Coxhead, A. 1998. **An Academic Word List, English Language Institute Occasional Publication Number 18**. Wellington: Victoria University of Wellington.
- _____. 2000. A new academic word list. **TESOL Quarterly**. 34 (2): 213-238.
- Crosby, G.A. 1987. Does a scientist need foreign language?. **Foreign Language Annals**. 20 (2): 181-183.
- Dudley-Evans, T. and M.J. St. John. 1998. **Developments in English for Specific Purposes**. Cambridge: Cambridge University Press.
- Flowerdew, L. 1997. Interpersonal strategies: Investigating interlanguage corpora. **RELC Journal**. 28 (1): 72-108.
- _____. 2003. A combined corpus and systemic-functional analysis of the problem-solution pattern in students and professional corpus of technical writing. **TESOL Quarterly**. 37 (3): 489-511.
- Fox, G. 1998. **Using Corpus Data in the Classroom**. Cambridge: Cambridge University Press. Cited in Tomlinson B. 2003. **Materials Developments in Language Teaching**. Cambridge: Cambridge University Press.
- Francis, W. and H. Kucera. 1982. **Frequency Analysis of English Usage**. Boston: Houghton Mifflin Company.
- Gledhill, C. 2000. The discourse function of collocation in research article introductions. **English for Specific Purposes** 19 (2): 115-135.

- Hatch, E and C. Brown. 1995. **Vocabulary, Semantics, and Language Education**. Cambridge. USA: Cambridge University Press.
- Higgins, J. 1991. Which concordancer?. **A Comparative Review of MS-DOS Software System**. 19 (1-2): 91-100.
- Hill, J. 1997. **Collocation** (Online). http://www.disal.com.br/nroutes/nr6/pgnr6_03.htm, March 25, 2001.
- Hunston, S. 2002. **Corpora in Applied Linguistics**. Cambridge: Cambridge University Press.
- Hunt, A. and D. Beglar. 1998. **Current Research and Practice in Teaching Vocabulary. The Language Teacher** (Online). [http:// languagehyper.chubu.ac.jp/jalt/pub/tlt98/jan/hunt.html](http://languagehyper.chubu.ac.jp/jalt/pub/tlt98/jan/hunt.html), June 20, 2001.
- Hutchinson, T. and A. Water. 1987. **English for Specific Purposes: A Learning-Center Approach**. New York: Cambridge University Press.
- Jackson, H. and E.Z. Amvela. 2000. **Words, Meaning and Vocabulary: An Introduction to Modern English Lexicology: Open Linguistics Series**. London: Continuum International Publishing Group.
- Johson, E. 1992. **Review: Longman Mini Concordancer: Text study Software for Teacher and Students** (Online). www.jstor.org/pss/3020444, February 10, 1992.
- John, T. 1986. Micro-concord: a language's research tool. **ScienceDirect** 14 (2): 151-162.

- Kaewphanngam, C., M.M. Broughton and S. Soranasataporn. 2002. Corpus-based analysis: guidelines for getting practical language input in materials development. **SLLT Journal of Mahidol University**.
- Kalton, G. 1983. **Introduction to Survey Sampling**. Beverly Hills, CA: Sage.
cited Mayer C.F. 2002. **English Corpus Linguistics: An Introduction**.
Cambridge: Cambridge University Press.
- Kennedy, G. 1998. **An Introduction to Corpus Linguistics**. Addison Wesley Longman Limited.
- _____. 1992. **Preferred Ways of Putting Things with Implications for Language Teaching' in Directions**. n.p.
- Laufer, B. and P. Nation. 1995. Vocabulary size and use: lexical richness in L2 written production. **Applied Linguistic**. 16 (3): 307-322.
- Limtrakarn, S. 1999. **An abstract: Getting Thai Students to Read Effectively**.
ELT Collaboration: Towards Excellence in the New Millennium
(the 4th CULI international conference). Bangkok: Thailand.
- McEnergy, T. and A. Wilson. 2004. **ICT4LT Information and Communications Technology for Language Teachers** (Online). <http://www.ict4lt.org/en/index.htm>, May 7, 2004.
- McMurray, D. 1998. **Review of English language conferences in Asia: Increasing Regional Cooperation** (Online). <http://www.thaitesol.org/bulletin/1101/110107.html>, May 6, 2001.
- Meyer, C.F. 2002. **English Corpus Linguistics: An Introduction**. Cambridge: Cambridge University Press.

Nation, P. 1990. **Teaching and Learning New Vocabulary**. New York: Newbury House.

_____. 2001. **Learning Vocabulary in Another Language**. Cambridge University Press.

_____. and Hwang. 1995. Where would general service vocabulary stop and special purposes vocabulary begin? **System**. 23 (1): 35-41.

_____. and J. Newton. 1993. **Teaching vocabulary**. n.p. cited in Coady J. and T. Huckin (Eds.). 1997. **Second Language Vocabulary Acquisition: A Rationale for Pedagogy**. New York: Cambridge University Press.

Norri, J. and M. Kyoto. 1996. **A Corpus of English for Specific Purposes: Work in Progress at the University of Tampere**. n.p. cited in Meyer, C.F. 2000. **English Corpus Linguistic: An Introduction**. Cambridge: Cambridge University Press.

Nurweni, A. and J. Read. 1999. The English Language Knowledge of Indonesia University Students. **English for Specific Purposes** 18 (2): 161-175.

Poonpon, K. 2002. **Vocabulary Input in English for Science Courses: A Corpus analysis of Intensive and Extensive Course Materials**. Master of Arts Thesis in Applied Linguistics, Mahidol University.

Prapphal, K. 2001. **English Proficiency of Thai Learners and Directions of English Teaching and Learning in Thailand**. Master of Arts in Educations, Chulalongkorn University.

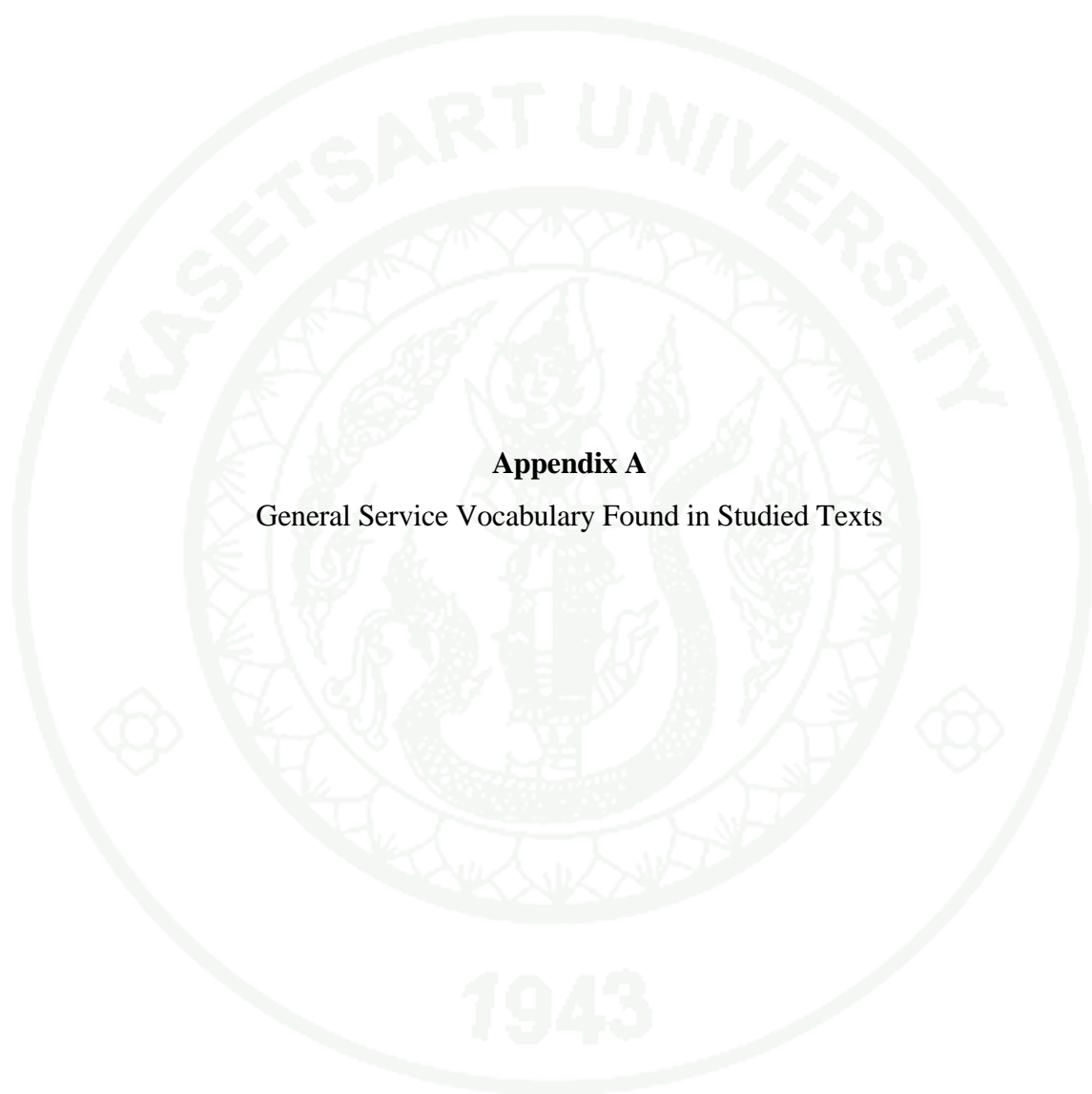
Read, J. 2000. **Accessing Vocabulary**. Cambridge: Cambridge University Press.

- Scott, M. 2010. **WordSmith Tool** (Online). www.lexically.net/wordsmith, January 2, 2010.
- Shie, C. 1999. **Collocation, Learner Corpus, Language Teaching** (Online). <http://www.dai.ed.ac.uk/homes/shei/collocation/top.html>, February 7, 2001.
- Sinclair, J. 1991. **Corpus, Concordancer, Collocation**. Oxford: Oxford University Press.
- Sukrangsun, K. 1993. **Action Research: Development of English Readability of M. 6 Students at Srinakarinwirot University Prasanmitr Demonstration School**. Master of Arts thesis in Educations, Srinakarinwirot University.
- Swales, J.M. 2000. Language for specific purposes. **Annual Review of Applied Linguistics**. (20): 59-76.
- Thammongkol, K. 1970. **The English Reading Ability of Thai Undergraduate Students**. Doctor of Arts Thesis in Educations, Syracuse University.
- Thorndike, E. and I. Lorge. 1994. **The Teacher's Workbook of 30,000 Words**. New York: Teacher's College.
- Thurstun, J. and C. Candlin. 1998. Concordancing and the teaching of the vocabulary of academic English. **English for Specific Purposes**. 17 (3): 267-280.
- Ulrich, A. 1996. **Post-Imperial English: Status Change in Former British and American Colonies**. Berlin: Mouton de Gruyter.
- Warning, R. 2001. **How Should Teachers Incorporate Vocabulary Teaching into Their Classroom?** (Online). <http://www1.harenet.ne.jp/warning/papers/eltnews.html>, April 3, 2002.

- Warning, R. and P. Nation. 1997. **Vocabulary Size, Text Coverage and Word Lists** (Online). <http://www1.harenet.ne.jp/warning/papers/cup.html>, May 6, 2001.
- West, M. 1953. **General Service List of English Words**. London: Longman, Green & Co.
- Wiruhayan, 1987. **Levels of English Readability of Mattayom 4-6 Students**. Master of Arts thesis in Educations, Chulalongkorn University.
- Wongchalad, V. 1976. **An Analysis of English Vocabulary and Frequency Appearing in University Chemistry**. Master of Art thesis in Education., Srinakarinwirot University.
- Wood, A. 1997. **International Scientific English: Some Thoughts on Science, Language and Ownership** (Online). <http://www.tribunes.com/-tribune/are97/wooda.htm>, June 5, 2001.
- Worthington, D. and P. Nation. 1996. Using texts to sequence the introduction of new vocabulary in an EAP course. **RELC Journal**. 27 (2): 1-11.
- Xue, G. and P. Nation. 1984. **“A University Word List” Language Learning and Communication**. n. p.



APPENDICES



Appendix A

General Service Vocabulary Found in Studied Texts

Appendix Table 1 General Service Vocabulary in TU Corpus Found in the First 1,000 Most Occurring in the GSL

| | Word Families | Occurrences | Word Families | Occurrences | |
|-----|----------------------|--------------------|----------------------|--------------------|-----|
| 1. | a | 992 | 29. | also | 35 |
| 2. | able | 18 | 30. | although | 13 |
| 3. | about | 48 | 31. | always | 20 |
| 4. | above | 14 | 32. | among | 5 |
| 5. | accept | 3 | 33. | amount | 15 |
| 6. | accord | 11 | 34. | ancient | 1 |
| 7. | account | 5 | 35. | and | 699 |
| 8. | across | 3 | 36. | animal | 10 |
| 9. | act | 19 | 37. | another | 17 |
| 10. | active | 24 | 38. | answer | 38 |
| 11. | actual | 1 | 39. | any | 23 |
| 12. | add | 26 | 40. | appear | 5 |
| 13. | advance | 2 | 41. | apply | 11 |
| 14. | advantage | 7 | 42. | appoint | 1 |
| 15. | after | 15 | 43. | April | 3 |
| 16. | again | 15 | 44. | arise | 1 |
| 17. | against | 3 | 45. | arm | 1 |
| 18. | age | 2 | 46. | around | 4 |
| 19. | agent | 2 | 47. | arrive | 2 |
| 20. | ago | 1 | 48. | art | 3 |
| 21. | agree | 11 | 49. | article | 1 |
| 22. | air | 17 | 50. | as | 122 |
| 23. | all | 40 | 51. | ask | 6 |
| 24. | allow | 7 | 52. | associate | 2 |
| 25. | almost | 5 | 53. | at | 52 |
| 26. | alone | 4 | 54. | attack | 2 |
| 27. | along | 3 | 55. | away | 6 |
| 28. | already | 8 | 56. | back | 11 |

Appendix Table 1 (Continued)

| | Word Families | Occurrences | | Word Families | Occurrences |
|-----|----------------------|--------------------|------|----------------------|--------------------|
| 57. | bad | 1 | 85. | branch | 14 |
| 58. | ball | 2 | 86. | bread | 1 |
| 59. | bank | 2 | 87. | break | 32 |
| 60. | bar | 9 | 88. | bridge | 3 |
| 61. | base | 17 | 89. | bright | 4 |
| 62. | be | 1,099 | 90. | bring | 6 |
| 63. | bear | 3 | 91. | broad | 6 |
| 64. | beauty | 9 | 92. | brother | 2 |
| 65. | because | 18 | 93. | build | 20 |
| 66. | become | 12 | 94. | burn | 5 |
| 67. | bed | 2 | 95. | business | 1 |
| 68. | before | 27 | 96. | but | 45 |
| 69. | begin | 13 | 97. | buy | 6 |
| 70. | behind | 5 | 98. | by | 111 |
| 71. | believe | 2 | 99. | call | 23 |
| 72. | below | 38 | 100. | can | 195 |
| 73. | best | 17 | 101. | capital | 7 |
| 74. | between | 12 | 102. | car | 25 |
| 75. | beyond | 3 | 103. | care | 5 |
| 76. | big | 8 | 104. | carry | 4 |
| 77. | bill | 8 | 105. | case | 10 |
| 78. | blow | 2 | 106. | catch | 2 |
| 79. | board | 2 | 107. | cause | 37 |
| 80. | body | 10 | 108. | centre | 9 |
| 81. | book | 10 | 109. | certain | 2 |
| 82. | both | 10 | 110. | change | 15 |
| 83. | box | 14 | 111. | character | 4 |
| 84. | boy | 2 | 112. | charge | 1 |

Appendix Table 1 (Continued)

| Word Families | Occurrences | Word Families | Occurrences |
|----------------------|--------------------|----------------------|--------------------|
| 113. chief | 7 | 141. cotton | 9 |
| 114. child | 5 | 142. could | 18 |
| 115. choose | 14 | 143. count | 4 |
| 116. church | 1 | 144. country | 11 |
| 117. circle | 2 | 145. course | 1 |
| 118. city | 10 | 146. cover | 9 |
| 119. claim | 2 | 147. cross | 2 |
| 120. class | 12 | 148. current | 5 |
| 121. clear | 8 | 149. cut | 7 |
| 122. close | 23 | 150. danger | 7 |
| 123. cloud | 1 | 151. dark | 1 |
| 124. coal | 1 | 152. date | 6 |
| 125. coin | 3 | 153. day | 10 |
| 126. cold | 2 | 154. dead | 7 |
| 127. color | 13 | 155. deal | 13 |
| 128. come | 22 | 156. decide | 8 |
| 129. common | 16 | 157. deep | 7 |
| 130. company | 13 | 158. degree | 6 |
| 131. complete | 30 | 159. department | 3 |
| 132. concern | 11 | 160. depend | 6 |
| 133. condition | 5 | 161. describe | 63 |
| 134. consider | 7 | 162. desert | 2 |
| 135. contain | 23 | 163. desire | 4 |
| 136. content | 3 | 164. destroy | 2 |
| 137. continue | 8 | 165. detail | 17 |
| 138. control | 5 | 166. determine | 6 |
| 139. corn | 1 | 167. develop | 14 |
| 140. cost | 16 | 168. die | 4 |

Appendix Table 1 (Continued)

| | Word Families | Occurrences | Word Families | Occurrences | |
|------|----------------------|--------------------|----------------------|--------------------|----|
| 169. | difference | 29 | 197. | eight | 3 |
| 170. | difficult | 10 | 198. | either | 3 |
| 171. | direct | 8 | 199. | eleven | 2 |
| 172. | discover | 5 | 200. | else | 1 |
| 173. | distance | 4 | 201. | employ | 15 |
| 174. | distinguish | 1 | 202. | end | 19 |
| 175. | divide | 7 | 203. | English | 30 |
| 176. | do | 132 | 204. | enjoy | 1 |
| 177. | doctor | 4 | 205. | enough | 11 |
| 178. | dog | 2 | 206. | enter | 6 |
| 179. | dollar | 3 | 207. | equal | 29 |
| 180. | door | 5 | 208. | escape | 2 |
| 181. | down | 22 | 209. | even | 16 |
| 182. | draw | 20 | 210. | evening | 2 |
| 183. | drink | 4 | 211. | event | 3 |
| 184. | drive | 1 | 212. | ever | 2 |
| 185. | drop | 9 | 213. | every | 13 |
| 186. | dry | 14 | 214. | example | 57 |
| 187. | due | 4 | 215. | except | 3 |
| 188. | duty | 2 | 216. | exercise | 24 |
| 189. | each | 54 | 217. | exist | 5 |
| 190. | early | 6 | 218. | expect | 2 |
| 191. | earth | 5 | 219. | expense | 6 |
| 192. | easy | 56 | 220. | experience | 1 |
| 193. | eat | 3 | 221. | experiment | 2 |
| 194. | effect | 28 | 222. | explain | 19 |
| 195. | efficient | 6 | 223. | express | 31 |
| 196. | egg | 3 | 224. | extend | 2 |

Appendix Table 1 (Continued)

| Word Families | Occurrences | Word Families | Occurrences |
|----------------------|--------------------|----------------------|--------------------|
| 225. face | 5 | 253. floor | 6 |
| 226. fact | 12 | 254. flow | 11 |
| 227. factory | 10 | 255. flower | 1 |
| 228. fail | 2 | 256. fly | 1 |
| 229. fair | 1 | 257. follow | 109 |
| 230. fall | 17 | 258. food | 10 |
| 231. familiar | 3 | 259. for | 235 |
| 232. family | 4 | 260. force | 10 |
| 233. famous | 1 | 261. forest | 2 |
| 234. far | 8 | 262. forget | 3 |
| 235. farm | 3 | 263. form | 77 |
| 236. fast | 10 | 264. former | 1 |
| 237. favor | 1 | 265. four | 26 |
| 238. February | 2 | 266. free | 3 |
| 239. feel | 3 | 267. fresh | 3 |
| 240. few | 10 | 268. Friday | 2 |
| 241. field | 6 | 269. friend | 6 |
| 242. figure | 64 | 270. from | 162 |
| 243. fill | 5 | 271. front | 3 |
| 244. find | 38 | 272. full | 9 |
| 245. fine | 6 | 273. furnish | 1 |
| 246. finish | 26 | 274. future | 1 |
| 247. fire | 11 | 275. gain | 5 |
| 248. first | 20 | 276. game | 2 |
| 249. fish | 9 | 277. garden | 1 |
| 250. fit | 6 | 278. gas | 6 |
| 251. five | 22 | 279. general | 9 |
| 252. fix | 5 | 280. get | 28 |

Appendix Table 1 (Continued)

| | Word Families | Occurrences | Word Families | Occurrences | |
|------|----------------------|--------------------|----------------------|--------------------|-----|
| 281. | girl | 3 | 309. | hold | 7 |
| 282. | give | 60 | 310. | home | 5 |
| 283. | glass | 27 | 311. | hope | 1 |
| 284. | go | 23 | 312. | horse | 4 |
| 285. | gold | 14 | 313. | hot | 5 |
| 286. | good | 11 | 314. | hour | 11 |
| 287. | great | 13 | 315. | house | 7 |
| 288. | green | 2 | 316. | how | 88 |
| 289. | ground | 5 | 317. | however | 17 |
| 290. | group | 13 | 318. | human | 9 |
| 291. | grow | 13 | 319. | hundred | 4 |
| 292. | half | 7 | 320. | I | 144 |
| 293. | hand | 12 | 321. | idea | 21 |
| 294. | hang | 2 | 322. | if | 54 |
| 295. | happen | 3 | 323. | ill | 2 |
| 296. | happy | 4 | 324. | important | 10 |
| 297. | hard | 27 | 325. | in | 513 |
| 298. | hardly | 1 | 326. | inch | 8 |
| 299. | have | 216 | 327. | include | 30 |
| 300. | he | 106 | 328. | increase | 25 |
| 301. | head | 3 | 329. | independent | 3 |
| 302. | hear | 11 | 330. | industry | 16 |
| 303. | heart | 1 | 331. | influence | 4 |
| 304. | heat | 45 | 332. | instead | 2 |
| 305. | heavy | 6 | 333. | interest | 13 |
| 306. | help | 35 | 334. | into | 71 |
| 307. | here | 14 | 335. | introduce | 9 |
| 308. | high | 22 | 336. | iron | 19 |

Appendix Table 1 (Continued)

| | Word Families | Occurrences | Word Families | Occurrences | |
|------|----------------------|--------------------|----------------------|--------------------|-----|
| 337. | it | 281 | 365. | lie | 1 |
| 338. | join | 4 | 366. | life | 3 |
| 339. | joint | 2 | 367. | lift | 4 |
| 340. | jointed | 6 | 368. | light | 14 |
| 341. | June | 3 | 369. | like | 18 |
| 342. | just | 9 | 370. | likely | 3 |
| 343. | keep | 15 | 371. | limit | 1 |
| 344. | kind | 14 | 372. | line | 17 |
| 345. | know | 33 | 373. | listen | 19 |
| 346. | lack | 1 | 374. | little | 13 |
| 347. | lady | 1 | 375. | live | 2 |
| 348. | lake | 10 | 376. | local | 3 |
| 349. | land | 2 | 377. | long | 22 |
| 350. | language | 21 | 378. | look | 17 |
| 351. | large | 23 | 379. | lose | 2 |
| 352. | last | 11 | 380. | loss | 1 |
| 353. | late | 3 | 381. | love | 5 |
| 354. | law | 3 | 382. | low | 25 |
| 355. | lead | 22 | 383. | machine | 24 |
| 356. | learn | 19 | 384. | main | 36 |
| 357. | leave | 18 | 385. | make | 108 |
| 358. | left | 17 | 386. | man | 7 |
| 359. | length | 8 | 387. | manner | 5 |
| 360. | less | 25 | 388. | manufacture | 21 |
| 361. | let | 20 | 389. | many | 49 |
| 362. | letter | 17 | 390. | march | 3 |
| 363. | level | 16 | 391. | mark | 4 |
| 364. | library | 3 | 392. | market | 5 |

Appendix Table 1 (Continued)

| | Word Families | Occurrences | Word Families | Occurrences | |
|------|----------------------|--------------------|----------------------|--------------------|-----|
| 393. | mass | 9 | 421. | mother | 2 |
| 394. | material | 93 | 422. | motor | 2 |
| 395. | matter | 6 | 423. | mountain | 2 |
| 396. | may | 44 | 424. | move | 13 |
| 397. | mean | 49 | 425. | much | 24 |
| 398. | measure | 4 | 426. | must | 19 |
| 399. | meet | 9 | 427. | name | 31 |
| 400. | member | 4 | 428. | nation | 1 |
| 401. | memory | 1 | 429. | native | 1 |
| 402. | mention | 11 | 430. | nature | 8 |
| 403. | metal | 61 | 431. | near | 6 |
| 404. | middle | 1 | 432. | necessary | 14 |
| 405. | might | 2 | 433. | need | 39 |
| 406. | mile | 2 | 434. | neither | 2 |
| 407. | milk | 4 | 437. | never | 12 |
| 408. | million | 35 | 436. | new | 27 |
| 409. | mind | 1 | 437. | news | 2 |
| 410. | minute | 8 | 438. | newspaper | 4 |
| 411. | miss | 5 | 439. | next | 15 |
| 412. | modern | 1 | 440. | night | 2 |
| 413. | moment | 1 | 441. | nine | 6 |
| 414. | Monday | 3 | 442. | no | 16 |
| 415. | money | 9 | 443. | none | 2 |
| 416. | month | 9 | 444. | nor | 3 |
| 417. | more | 72 | 445. | north | 2 |
| 418. | moreover | 1 | 446. | not | 116 |
| 419. | morning | 2 | 447. | note | 7 |
| 420. | most | 47 | 448. | notice | 2 |

Appendix Table 1 (Continued)

| | Word Families | Occurrences | Word Families | Occurrences | |
|------|----------------------|--------------------|----------------------|--------------------|----|
| 449. | now | 22 | 477. | own | 14 |
| 450. | number | 1,029 | 478. | page | 9 |
| 451. | numerical | 3 | 479. | paint | 8 |
| 452. | numerous | 1 | 480. | paper | 30 |
| 453. | object | 20 | 481. | part | 41 |
| 454. | observe | 1 | 482. | particular | 7 |
| 455. | of | 837 | 483. | party | 2 |
| 456. | off | 13 | 484. | pass | 7 |
| 457. | offer | 1 | 485. | past | 4 |
| 458. | office | 4 | 486. | pay | 7 |
| 459. | often | 15 | 487. | people | 28 |
| 460. | oh | 1 | 488. | per | 42 |
| 461. | oil | 7 | 498. | person | 16 |
| 462. | old | 4 | 490. | picture | 25 |
| 463. | on | 159 | 491. | piece | 5 |
| 464. | once | 3 | 492. | place | 25 |
| 465. | one | 96 | 493. | plan | 5 |
| 466. | only | 16 | 494. | plant | 17 |
| 467. | open | 19 | 495. | play | 9 |
| 468. | operate | 15 | 496. | please | 2 |
| 469. | or | 257 | 497. | point | 30 |
| 470. | order | 9 | 498. | political | 1 |
| 471. | ordinary | 1 | 499. | poor | 5 |
| 472. | organize | 11 | 500. | population | 7 |
| 473. | other | 68 | 501. | position | 5 |
| 474. | out | 41 | 502. | possess | 1 |
| 475. | over | 15 | 503. | possible | 9 |
| 476. | owe | 1 | 504. | post | 2 |

Appendix Table 1 (Continued)

| Word Families | Occurrences | Word Families | Occurrences |
|---------------|-------------|----------------|-------------|
| 505. pound | 13 | 533. quite | 3 |
| 506. power | 17 | 534. raise | 5 |
| 507. prepare | 5 | 535. rank | 1 |
| 508. present | 38 | 536. rate | 9 |
| 509. press | 16 | 537. rather | 3 |
| 510. pressure | 4 | 538. reach | 6 |
| 511. pretty | 1 | 539. read | 59 |
| 512. prevent | 6 | 540. ready | 6 |
| 513. price | 5 | 541. real | 10 |
| 514. problem | 54 | 542. realize | 4 |
| 515. produce | 24 | 543. reason | 9 |
| 516. product | 75 | 544. receive | 1 |
| 517. profit | 9 | 545. recognize | 2 |
| 518. progress | 1 | 546. record | 9 |
| 519. proof | 6 | 547. red | 4 |
| 520. proper | 12 | 548. reduce | 8 |
| 521. property | 21 | 549. regard | 1 |
| 522. protect | 9 | 550. relation | 6 |
| 523. prove | 6 | 551. religion | 1 |
| 524. provide | 9 | 552. remain | 6 |
| 525. public | 2 | 553. remember | 9 |
| 526. pull | 2 | 554. report | 9 |
| 527. purpose | 8 | 555. represent | 3 |
| 528. put | 21 | 556. reserve | 4 |
| 529. quality | 12 | 557. result | 16 |
| 530. quantity | 27 | 558. return | 7 |
| 531. quarter | 6 | 559. rich | 3 |
| 532. question | 13 | 560. right | 22 |

Appendix Table 1 (Continued)

| Word Families | | Occurrences | Word Families | | Occurrences |
|---------------|----------|-------------|---------------|----------|-------------|
| 561. | ring | 2 | 589. | sense | 8 |
| 562. | rise | 22 | 590. | separate | 12 |
| 563. | river | 3 | 591. | serious | 6 |
| 564. | road | 1 | 592. | serve | 1 |
| 565. | rock | 6 | 593. | service | 6 |
| 566. | roll | 2 | 594. | set | 11 |
| 567. | room | 3 | 595. | seven | 13 |
| 568. | rough | 3 | 596. | several | 1 |
| 569. | rule | 4 | 597. | shake | 3 |
| 570. | run | 10 | 598. | shall | 1 |
| 571. | safe | 23 | 599. | shape | 71 |
| 572. | sail | 1 | 600. | share | 4 |
| 573. | sale | 7 | 601. | she | 35 |
| 574. | salt | 7 | 602. | shine | 13 |
| 575. | same | 26 | 603. | ship | 2 |
| 576. | Saturday | 1 | 604. | shoot | 1 |
| 577. | save | 6 | 605. | short | 7 |
| 578. | say | 19 | 606. | should | 52 |
| 579. | scarce | 2 | 607. | show | 49 |
| 580. | school | 7 | 608. | side | 13 |
| 581. | science | 12 | 609. | sign | 5 |
| 582. | sea | 4 | 610. | silence | 1 |
| 583. | seat | 1 | 611. | silver | 17 |
| 584. | second | 26 | 612. | simple | 18 |
| 585. | see | 31 | 613. | since | 8 |
| 586. | seem | 7 | 614. | single | 1 |
| 587. | sell | 4 | 615. | sister | 1 |
| 588. | send | 3 | 616. | sit | 1 |

Appendix Table 1 (Continued)

| Word Families | Occurrences | Word Families | Occurrences |
|----------------|-------------|----------------|-------------|
| 617. situation | 6 | 645. state | 19 |
| 618. six | 8 | 646. station | 1 |
| 619. size | 16 | 647. stay | 7 |
| 620. small | 23 | 648. steel | 29 |
| 621. snow | 2 | 649. step | 29 |
| 622. so | 30 | 650. still | 8 |
| 623. social | 1 | 651. stock | 2 |
| 624. soft | 17 | 652. stone | 2 |
| 625. some | 91 | 653. stop | 5 |
| 626. soon | 2 | 654. store | 1 |
| 627. sort | 3 | 655. story | 1 |
| 628. sound | 7 | 656. strange | 1 |
| 629. space | 23 | 657. street | 2 |
| 630. speak | 19 | 658. strength | 10 |
| 631. special | 5 | 659. strike | 3 |
| 632. speed | 8 | 660. strong | 10 |
| 633. spend | 27 | 661. student | 34 |
| 634. spirit | 1 | 662. study | 8 |
| 635. spite | 12 | 663. subject | 8 |
| 636. spot | 2 | 664. substance | 19 |
| 637. spread | 1 | 665. succeed | 2 |
| 638. spring | 4 | 666. such | 28 |
| 639. square | 13 | 667. suggest | 6 |
| 640. stage | 15 | 668. sun | 2 |
| 641. stand | 1 | 669. Sunday | 1 |
| 642. standard | 13 | 670. supply | 8 |
| 643. star | 1 | 671. support | 1 |
| 644. start | 20 | 672. sure | 10 |

Appendix Table 1 (Continued)

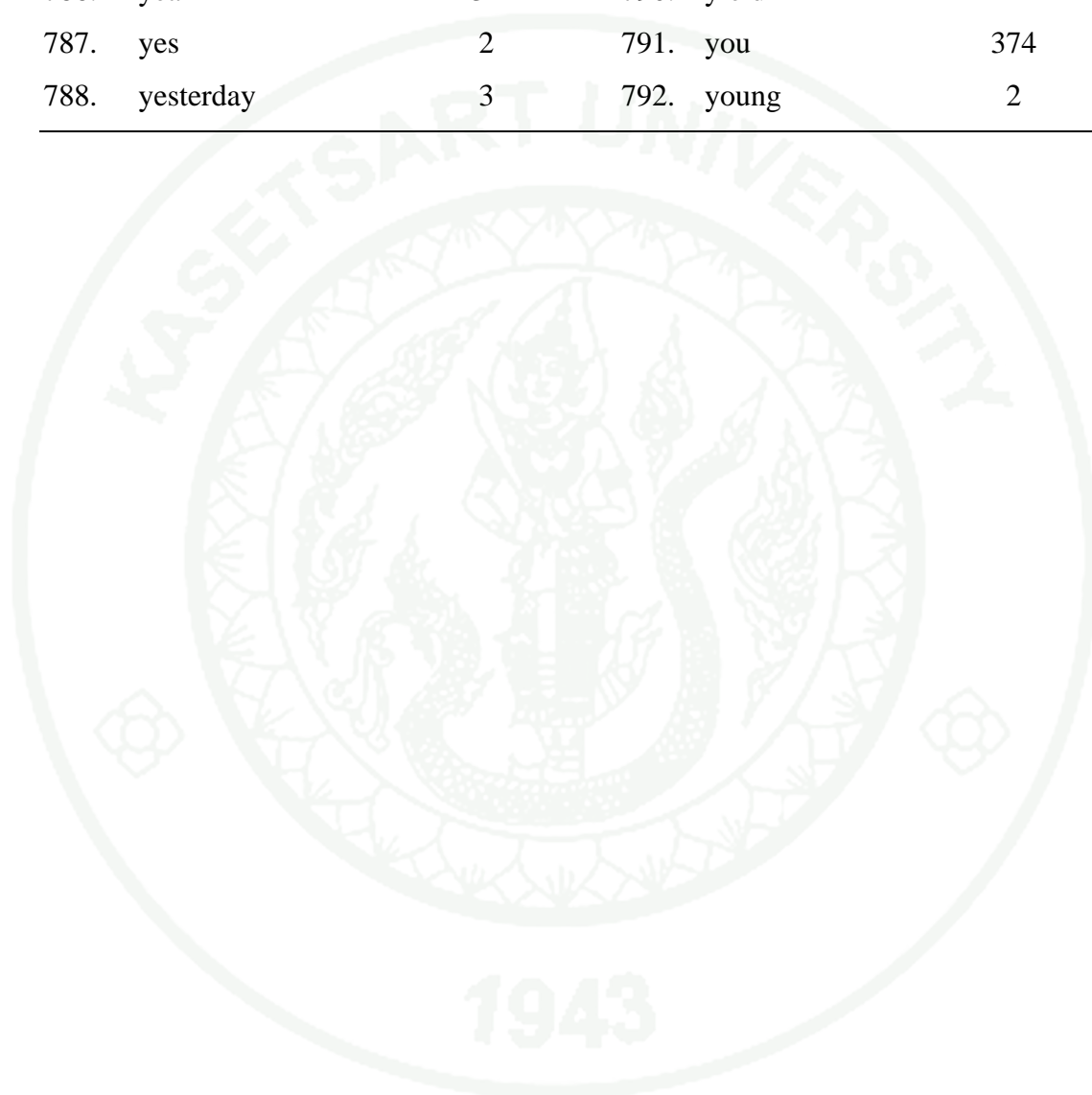
| | Word Families | Occurrences | Word Families | Occurrences | |
|------|----------------------|--------------------|----------------------|--------------------|-----|
| 673. | surface | 15 | 701. | throw | 1 |
| 674. | surprise | 3 | 702. | thus | 4 |
| 675. | sweet | 1 | 703. | till | 1 |
| 676. | system | 14 | 704. | time | 49 |
| 677. | table | 43 | 705. | to | 808 |
| 678. | take | 34 | 706. | today | 4 |
| 679. | talk | 19 | 707. | together | 20 |
| 680. | teach | 7 | 708. | ton | 1 |
| 681. | tear | 3 | 709. | too | 14 |
| 682. | tell | 10 | 710. | top | 8 |
| 683. | ten | 10 | 711. | total | 6 |
| 684. | term | 21 | 712. | touch | 4 |
| 686. | test | 6 | 713. | town | 1 |
| 686. | than | 57 | 714. | trade | 1 |
| 687. | the | 1782 | 715. | train | 32 |
| 688. | then | 38 | 716. | travel | 2 |
| 689. | there | 36 | 717. | tree | 6 |
| 690. | therefore | 4 | 718. | true | 8 |
| 691. | they | 132 | 719. | try | 17 |
| 692. | thing | 15 | 720. | turn | 11 |
| 693. | think | 26 | 721. | twelve | 1 |
| 694. | thirteen | 1 | 722. | twenty | 2 |
| 695. | thirty | 1 | 723. | two | 51 |
| 696. | this | 363 | 724. | type | 11 |
| 697. | though | 14 | 725. | under | 7 |
| 698. | thousand | 6 | 726. | understand | 16 |
| 699. | three | 45 | 727. | unite | 100 |
| 700. | through | 28 | 728. | university | 3 |

Appendix Table 1 (Continued)

| | Word Families | Occurrences | Word Families | Occurrences | |
|------|----------------------|--------------------|----------------------|--------------------|-----|
| 729. | unless | 3 | 757. | when | 72 |
| 730. | until | 11 | 758. | where | 17 |
| 731. | up | 29 | 759. | whether | 4 |
| 732. | use | 244 | 760. | which | 60 |
| 733. | usual | 27 | 761. | while | 14 |
| 734. | value | 8 | 762. | white | 7 |
| 735. | variety | 4 | 763. | who | 48 |
| 736. | various | 13 | 764. | whole | 5 |
| 737. | very | 40 | 765. | why | 21 |
| 738. | view | 2 | 766. | wide | 17 |
| 739. | village | 1 | 767. | wife | 2 |
| 740. | visit | 7 | 768. | will | 61 |
| 741. | voice | 3 | 769. | win | 5 |
| 742. | vote | 1 | 770. | wind | 1 |
| 743. | wage | 1 | 771. | window | 7 |
| 744. | wait | 4 | 772. | winter | 1 |
| 745. | walk | 4 | 773. | wise | 1 |
| 746. | wall | 7 | 774. | wish | 2 |
| 747. | want | 22 | 775. | with | 208 |
| 748. | watch | 4 | 776. | within | 3 |
| 749. | water | 54 | 777. | without | 31 |
| 750. | wave | 2 | 778. | woman | 4 |
| 751. | way | 36 | 779. | wood | 13 |
| 752. | we | 103 | 780. | word | 88 |
| 753. | wear | 11 | 781. | work | 80 |
| 754. | welcome | 1 | 782. | world | 16 |
| 755. | well | 9 | 783. | would | 11 |
| 756. | what | 94 | 784. | write | 50 |

Appendix Table 1 (Continued)

| | Word Families | Occurrences | Word Families | Occurrences | |
|------|----------------------|--------------------|----------------------|--------------------|-----|
| 785. | wrong | 3 | 789. | yet | 7 |
| 786. | year | 31 | 790. | yield | 2 |
| 787. | yes | 2 | 791. | you | 374 |
| 788. | yesterday | 3 | 792. | young | 2 |



Appendix Table 2 General Service Words in TU1 Corpus Found in the First 1,000
Most Occurring in the GSL

| | Word Families | Occurrences | Word Families | Occurrences | |
|-----|---------------|-------------|---------------|-------------|-----|
| 1. | a | 625 | 29. | among | 1 |
| 2. | able | 5 | 30. | amount | 10 |
| 3. | about | 46 | 31. | ancient | 2 |
| 4. | above | 14 | 32. | and | 405 |
| 5. | accept | 1 | 33. | another | 11 |
| 6. | accord | 9 | 34. | answer | 17 |
| 7. | account | 2 | 35. | any | 14 |
| 8. | act | 18 | 36. | appear | 6 |
| 9. | active | 8 | 37. | apply | 25 |
| 10. | actual | 1 | 38. | around | 9 |
| 11. | add | 7 | 39. | article | 3 |
| 12. | admit | 1 | 40. | as | 104 |
| 13. | advance | 5 | 41. | ask | 1 |
| 14. | advantage | 10 | 42. | associate | 3 |
| 15. | after | 19 | 43. | at | 66 |
| 16. | again | 2 | 44. | attack | 3 |
| 17. | against | 4 | 45. | average | 2 |
| 18. | age | 4 | 46. | away | 5 |
| 19. | ago | 4 | 47. | back | 21 |
| 20. | air | 68 | 48. | bad | 1 |
| 21. | all | 23 | 49. | ball | 2 |
| 22. | allow | 6 | 50. | bar | 2 |
| 23. | alone | 1 | 51. | base | 13 |
| 24. | along | 3 | 52. | be | 603 |
| 25. | already | 2 | 53. | bear | 2 |
| 26. | also | 19 | 54. | beauty | 1 |
| 27. | although | 3 | 55. | because | 31 |
| 28. | always | 2 | 56. | become | 10 |

Appendix Table 2 (Continued)

| | Word Families | Occurrences | Word Families | Occurrences | |
|-----|----------------------|--------------------|----------------------|--------------------|----|
| 57. | bed | 2 | 85. | call | 10 |
| 58. | before | 12 | 86. | can | 95 |
| 59. | begin | 7 | 87. | car | 41 |
| 60. | behind | 4 | 88. | care | 4 |
| 61. | below | 43 | 89. | carry | 4 |
| 62. | beneath | 1 | 90. | case | 4 |
| 63. | beside | 1 | 91. | catch | 1 |
| 64. | best | 8 | 92. | cause | 19 |
| 65. | between | 19 | 93. | centre | 4 |
| 66. | big | 4 | 94. | certain | 2 |
| 67. | black | 6 | 95. | chance | 2 |
| 68. | blow | 2 | 96. | change | 9 |
| 69. | blue | 7 | 97. | character | 5 |
| 70. | board | 1 | 98. | charge | 3 |
| 71. | body | 6 | 99. | chief | 1 |
| 72. | both | 27 | 100. | child | 1 |
| 73. | box | 4 | 101. | choose | 5 |
| 74. | boy | 1 | 102. | church | 2 |
| 75. | branch | 1 | 103. | circle | 1 |
| 76. | break | 13 | 104. | class | 6 |
| 77. | bridge | 1 | 105. | clear | 7 |
| 78. | bright | 4 | 106. | close | 6 |
| 79. | build | 53 | 107. | cloud | 7 |
| 80. | burn | 4 | 108. | coal | 1 |
| 81. | business | 2 | 109. | cold | 7 |
| 82. | but | 26 | 110. | color | 9 |
| 83. | buy | 3 | 111. | come | 10 |
| 84. | by | 83 | 112. | committee | 1 |

Appendix Table 2 (Continued)

| | Word Families | Occurrences | Word Families | Occurrences |
|------|----------------------|--------------------|----------------------|--------------------|
| 113. | common | 15 | 141. degree | 3 |
| 114. | company | 7 | 142. department | 2 |
| 115. | complete | 23 | 143. depend | 5 |
| 116. | concern | 3 | 144. describe | 72 |
| 117. | condition | 20 | 145. desire | 2 |
| 118. | consider | 2 | 146. detail | 9 |
| 119. | contain | 6 | 147. determine | 6 |
| 120. | content | 2 | 148. develop | 12 |
| 121. | continue | 4 | 149. difference | 18 |
| 122. | control | 32 | 150. difficult | 7 |
| 123. | cost | 9 | 151. direct | 19 |
| 124. | could | 8 | 152. distance | 6 |
| 125. | count | 2 | 153. district | 3 |
| 126. | country | 1 | 154. divide | 4 |
| 127. | course | 4 | 155. do | 65 |
| 128. | cover | 12 | 156. doctor | 1 |
| 129. | cry | 1 | 157. door | 6 |
| 130. | current | 6 | 158. down | 13 |
| 131. | cut | 2 | 159. draw | 6 |
| 132. | danger | 1 | 160. drink | 1 |
| 133. | dark | 2 | 161. drive | 44 |
| 134. | date | 2 | 162. drop | 1 |
| 135. | day | 17 | 163. dry | 7 |
| 136. | dead | 1 | 164. due | 6 |
| 137. | deal | 2 | 165. duty | 1 |
| 138. | dear | 1 | 166. each | 14 |
| 139. | decide | 4 | 167. early | 6 |
| 140. | deep | 5 | 168. earth | 4 |

Appendix Table 2 (Continued)

| | Word Families | Occurrences | Word Families | Occurrences | |
|------|----------------------|--------------------|----------------------|--------------------|----|
| 169. | east | 2 | 197. | express | 8 |
| 170. | easy | 22 | 198. | extend | 2 |
| 171. | eat | 3 | 199. | eye | 6 |
| 172. | effect | 14 | 200. | face | 5 |
| 173. | efficient | 9 | 201. | fact | 6 |
| 174. | effort | 2 | 202. | factory | 2 |
| 175. | eight | 4 | 203. | fail | 6 |
| 176. | either | 14 | 204. | fair | 9 |
| 177. | else | 1 | 205. | fall | 10 |
| 178. | employ | 1 | 206. | familiar | 2 |
| 179. | end | 7 | 207. | family | 1 |
| 180. | enough | 1 | 208. | famous | 1 |
| 181. | enter | 3 | 209. | far | 10 |
| 182. | equal | 1 | 210. | fast | 5 |
| 183. | escape | 1 | 211. | feed | 1 |
| 184. | even | 4 | 212. | feeds | 1 |
| 185. | event | 6 | 213. | feel | 3 |
| 186. | ever | 2 | 214. | few | 3 |
| 187. | every | 6 | 215. | field | 3 |
| 188. | example | 24 | 216. | figure | 35 |
| 189. | exchange | 1 | 217. | fill | 6 |
| 190. | exercise | 7 | 218. | find | 19 |
| 191. | exist | 3 | 219. | fine | 6 |
| 192. | expect | 1 | 220. | finish | 1 |
| 193. | expense | 10 | 221. | fire | 5 |
| 194. | experience | 1 | 222. | first | 21 |
| 195. | experiment | 1 | 223. | fit | 3 |
| 196. | explain | 11 | 224. | five | 8 |

Appendix Table 2 (Continued)

| Word Families | Occurrences | Word Families | Occurrences |
|---------------|-------------|---------------|-------------|
| 225. fix | 2 | 253. good | 14 |
| 226. floor | 3 | 254. great | 9 |
| 227. flow | 5 | 255. green | 7 |
| 228. follow | 40 | 256. ground | 5 |
| 229. food | 2 | 257. grow | 2 |
| 230. for | 131 | 258. grow | 2 |
| 231. force | 19 | 259. h | 3 |
| 232. foreign | 1 | 260. half | 5 |
| 233. forest | 1 | 261. hand | 5 |
| 234. form | 23 | 262. happen | 11 |
| 235. four | 16 | 263. hard | 12 |
| 236. free | 4 | 264. have | 100 |
| 237. fresh | 1 | 265. he | 34 |
| 238. Friday | 3 | 266. head | 6 |
| 239. from | 98 | 267. hear | 2 |
| 240. front | 22 | 268. heart | 1 |
| 241. full | 9 | 269. heat | 119 |
| 242. furnish | 2 | 270. heavy | 4 |
| 243. future | 2 | 271. help | 11 |
| 244. gain | 6 | 272. here | 5 |
| 245. gas | 21 | 273. high | 36 |
| 246. general | 9 | 274. history | 1 |
| 247. get | 6 | 275. hold | 3 |
| 248. girl | 1 | 276. home | 10 |
| 249. give | 35 | 277. hope | 1 |
| 250. glass | 16 | 278. hot | 8 |
| 251. go | 8 | 279. hour | 2 |
| 252. gold | 2 | 280. house | 2 |

Appendix Table 2 (Continued)

| Word Families | Occurrences | Word Families | Occurrences |
|----------------------|--------------------|----------------------|--------------------|
| 281. how | 50 | 309. know | 16 |
| 282. however | 5 | 310. lack | 1 |
| 283. human | 3 | 311. language | 10 |
| 284. hundred | 2 | 312. large | 6 |
| 285. I | 32 | 313. last | 7 |
| 286. idea | 2 | 314. late | 7 |
| 287. if | 14 | 315. law | 1 |
| 288. important | 10 | 316. lead | 10 |
| 289. in | 331 | 317. learn | 18 |
| 290. inch | 5 | 318. leave | 1 |
| 291. include | 11 | 319. left | 7 |
| 292. increase | 7 | 320. length | 2 |
| 293. industry | 12 | 321. less | 11 |
| 294. instead | 3 | 322. letter | 4 |
| 295. interest | 2 | 323. level | 3 |
| 296. into | 40 | 324. lie | 1 |
| 297. introduce | 2 | 325. life | 4 |
| 298. iron | 10 | 326. lift | 1 |
| 299. it | 126 | 327. light | 24 |
| 300. joint | 9 | 328. like | 11 |
| 301. jointed | 1 | 329. likely | 2 |
| 302. judge | 1 | 330. limit | 7 |
| 303. July | 1 | 331. line | 19 |
| 304. June | 3 | 332. listen | 20 |
| 305. just | 8 | 333. little | 9 |
| 306. keep | 12 | 334. live | 4 |
| 307. kill | 1 | 335. local | 2 |
| 308. kind | 8 | 336. long | 9 |

Appendix Table 2 (Continued)

| Word Families | Occurrences | Word Families | Occurrences |
|------------------|-------------|----------------|-------------|
| 337. look | 19 | 365. mile | 1 |
| 338. lose | 5 | 366. milk | 1 |
| 339. loss | 10 | 367. million | 1 |
| 340. low | 20 | 368. mind | 1 |
| 341. machine | 3 | 369. minute | 1 |
| 342. main | 13 | 370. mister | 17 |
| 343. make | 47 | 371. modern | 6 |
| 344. man | 1 | 372. moment | 1 |
| 345. manner | 2 | 373. Monday | 1 |
| 346. manufacture | 1 | 374. month | 4 |
| 347. many | 29 | 375. more | 36 |
| 348. march | 2 | 376. morning | 2 |
| 349. mark | 3 | 377. most | 24 |
| 350. market | 2 | 378. motor | 5 |
| 351. mass | 2 | 379. move | 18 |
| 352. master | 3 | 380. much | 15 |
| 353. material | 88 | 381. must | 16 |
| 354. matter | 1 | 382. name | 4 |
| 355. may | 17 | 383. nation | 1 |
| 356. mean | 22 | 384. nature | 7 |
| 357. measure | 6 | 385. near | 7 |
| 358. meet | 4 | 386. necessary | 3 |
| 359. member | 1 | 387. need | 25 |
| 360. mention | 1 | 388. neither | 2 |
| 361. mere | 1 | 389. never | 1 |
| 362. metal | 17 | 390. new | 18 |
| 363. middle | 5 | 391. next | 4 |
| 364. might | 1 | 392. night | 7 |

Appendix Table 2 (Continued)

| Word Families | Occurrences | Word Families | Occurrences |
|---------------|-------------|-----------------|-------------|
| 393. nine | 1 | 421. order | 6 |
| 394. no | 5 | 422. ordinary | 1 |
| 395. nor | 2 | 423. other | 37 |
| 396. north | 3 | 424. out | 26 |
| 397. not | 50 | 425. over | 13 |
| 398. note | 3 | 426. own | 8 |
| 399. notice | 4 | 427. page | 1 |
| 400. November | 3 | 428. paint | 4 |
| 401. now | 21 | 429. paper | 5 |
| 402. number | 643 | 430. part | 25 |
| 403. object | 9 | 431. particular | 6 |
| 404. observe | 10 | 432. pass | 11 |
| 405. of | 550 | 433. past | 9 |
| 406. off | 16 | 434. pay | 1 |
| 407. offer | 3 | 437. people | 7 |
| 408. office | 5 | 436. per | 7 |
| 409. official | 2 | 437. permit | 2 |
| 410. often | 14 | 438. person | 3 |
| 411. oil | 9 | 439. picture | 4 |
| 412. old | 1 | 440. piece | 4 |
| 413. on | 97 | 441. place | 8 |
| 414. once | 1 | 442. plant | 17 |
| 415. one | 41 | 443. play | 2 |
| 416. only | 6 | 444. please | 2 |
| 417. open | 5 | 445. point | 21 |
| 418. operate | 24 | 446. poor | 10 |
| 419. opinion | 1 | 447. popular | 1 |
| 420. or | 117 | 448. position | 4 |

Appendix Table 2 (Continued)

| Word Families | Occurrences | Word Families | Occurrences |
|---------------|-------------|----------------|-------------|
| 449. possible | 11 | 477. reach | 1 |
| 450. pound | 1 | 478. read | 31 |
| 451. power | 19 | 479. ready | 5 |
| 452. prepare | 1 | 480. real | 5 |
| 453. present | 26 | 481. reason | 1 |
| 454. press | 2 | 482. receive | 12 |
| 455. pressure | 14 | 483. recent | 1 |
| 456. prevent | 25 | 484. record | 1 |
| 457. price | 2 | 485. red | 6 |
| 458. problem | 8 | 486. reduce | 8 |
| 459. produce | 18 | 487. relation | 3 |
| 460. product | 18 | 488. relative | 6 |
| 461. proper | 4 | 498. remain | 1 |
| 462. property | 41 | 490. remark | 3 |
| 463. protect | 8 | 491. remember | 5 |
| 464. prove | 1 | 492. report | 18 |
| 465. provide | 12 | 493. represent | 1 |
| 466. public | 1 | 494. result | 21 |
| 467. pull | 1 | 495. return | 2 |
| 468. purpose | 12 | 496. rich | 1 |
| 469. put | 4 | 497. ride | 2 |
| 470. quality | 6 | 498. right | 12 |
| 471. quantity | 1 | 499. rise | 4 |
| 472. question | 17 | 500. river | 3 |
| 473. quite | 6 | 501. road | 11 |
| 474. raise | 3 | 502. rock | 3 |
| 475. rate | 6 | 503. roll | 2 |
| 476. rather | 1 | 504. room | 2 |

Appendix Table 2 (Continued)

| Word Families | Occurrences | Word Families | Occurrences |
|----------------------|--------------------|----------------------|--------------------|
| 505. rough | 1 | 533. shake | 3 |
| 506. round | 1 | 534. shape | 10 |
| 507. rule | 1 | 535. share | 3 |
| 508. run | 4 | 536. she | 1 |
| 509. safe | 17 | 537. shine | 1 |
| 510. sale | 2 | 538. ship | 1 |
| 511. salt | 17 | 539. shoot | 1 |
| 512. same | 15 | 540. short | 3 |
| 513. save | 6 | 541. should | 18 |
| 514. say | 12 | 542. show | 18 |
| 515. science | 5 | 543. side | 21 |
| 516. sea | 3 | 544. sight | 1 |
| 517. seat | 3 | 545. sign | 2 |
| 518. second | 10 | 546. silver | 1 |
| 519. secret | 1 | 547. simple | 18 |
| 520. see | 10 | 548. since | 8 |
| 521. seem | 1 | 549. sing | 1 |
| 522. sell | 1 | 550. single | 5 |
| 523. send | 9 | 551. sit | 1 |
| 524. sense | 2 | 552. situation | 7 |
| 525. sensitive | 1 | 553. six | 1 |
| 526. separate | 3 | 554. size | 7 |
| 527. serious | 2 | 555. sky | 1 |
| 528. serve | 4 | 556. small | 14 |
| 529. service | 3 | 557. snow | 3 |
| 530. set | 5 | 558. so | 18 |
| 531. settle | 3 | 559. society | 1 |
| 532. several | 7 | 560. soft | 6 |

Appendix Table 2 (Continued)

| Word Families | Occurrences | Word Families | Occurrences |
|---------------|-------------|----------------|-------------|
| 561. some | 44 | 589. strong | 22 |
| 562. son | 1 | 590. student | 8 |
| 563. sort | 1 | 591. study | 21 |
| 564. sound | 8 | 592. subject | 5 |
| 565. space | 7 | 593. substance | 10 |
| 566. speak | 6 | 594. succeed | 2 |
| 567. special | 3 | 595. such | 24 |
| 568. speed | 18 | 596. suffer | 2 |
| 569. spring | 1 | 597. suggest | 1 |
| 570. square | 1 | 598. sun | 36 |
| 571. stage | 5 | 599. supply | 3 |
| 572. stand | 1 | 600. support | 7 |
| 573. standard | 3 | 601. sure | 2 |
| 574. star | 1 | 602. surface | 15 |
| 575. start | 2 | 603. surprise | 1 |
| 576. state | 22 | 604. surround | 2 |
| 577. station | 3 | 605. system | 171 |
| 578. stay | 3 | 606. table | 12 |
| 579. steel | 8 | 607. take | 16 |
| 580. step | 84 | 608. talk | 5 |
| 581. still | 6 | 609. teach | 2 |
| 582. stone | 5 | 610. tear | 1 |
| 583. stop | 13 | 611. tell | 6 |
| 584. store | 12 | 612. ten | 1 |
| 585. story | 1 | 613. term | 14 |
| 586. street | 1 | 614. test | 8 |
| 587. strength | 11 | 615. than | 36 |
| 588. strike | 2 | 616. the | 1,284 |

Appendix Table 2 (Continued)

| Word Families | Occurrences | Word Families | Occurrences |
|----------------|-------------|-----------------|-------------|
| 617. then | 25 | 645. twenty | 3 |
| 618. there | 23 | 646. two | 46 |
| 619. therefore | 4 | 647. type | 28 |
| 620. they | 99 | 648. under | 11 |
| 621. thing | 5 | 649. understand | 1 |
| 622. think | 10 | 650. unite | 36 |
| 623. this | 219 | 651. university | 1 |
| 624. thousand | 4 | 652. until | 4 |
| 625. three | 16 | 653. up | 22 |
| 626. through | 37 | 654. upon | 2 |
| 627. thus | 2 | 655. use | 201 |
| 628. till | 1 | 656. usual | 11 |
| 629. time | 22 | 657. value | 1 |
| 630. to | 395 | 658. various | 9 |
| 631. today | 6 | 659. very | 24 |
| 632. together | 9 | 660. view | 2 |
| 633. ton | 1 | 661. village | 1 |
| 634. too | 7 | 662. visit | 1 |
| 635. top | 5 | 663. voice | 2 |
| 636. touch | 1 | 664. wait | 1 |
| 637. toward | 1 | 665. walk | 1 |
| 638. town | 1 | 666. wall | 10 |
| 639. trade | 1 | 667. want | 3 |
| 640. travel | 4 | 668. watch | 1 |
| 641. tree | 1 | 669. water | 103 |
| 642. true | 3 | 670. wave | 4 |
| 643. try | 3 | 671. way | 14 |
| 644. turn | 7 | 672. we | 52 |

Appendix Table 2 (Continued)

| Word Families | Occurrences | Word Families | Occurrences |
|----------------------|--------------------|----------------------|--------------------|
| 673. week | 4 | 690. wish | 1 |
| 674. well | 9 | 691. with | 108 |
| 675. west | 1 | 692. within | 2 |
| 676. what | 58 | 693. without | 9 |
| 677. when | 52 | 694. wonder | 1 |
| 678. where | 9 | 695. wood | 9 |
| 679. whether | 4 | 696. word | 40 |
| 680. which | 55 | 697. work | 57 |
| 681. while | 15 | 698. world | 1 |
| 682. white | 4 | 699. would | 9 |
| 683. who | 11 | 700. wound | 1 |
| 684. why | 16 | 701. write | 15 |
| 686. wide | 3 | 702. wrong | 1 |
| 686. will | 42 | 703. year | 7 |
| 687. wind | 2 | 704. yes | 3 |
| 688. window | 3 | 705. yield | 2 |
| 689. winter | 4 | 706. you | 84 |

Appendix Table 3 General Service Words in RU Corpus Found in the First 1,000
Most Occurring in the GSL

| | Word Families | Occurrences | Word Families | Occurrences | |
|-----|---------------|-------------|---------------|-------------|-----|
| 1. | a | 1,212 | 29. | alone | 4 |
| 2. | able | 16 | 30. | along | 2 |
| 3. | about | 153 | 31. | already | 2 |
| 4. | above | 6 | 32. | also | 41 |
| 5. | accept | 5 | 33. | although | 3 |
| 6. | accord | 6 | 34. | always | 20 |
| 7. | account | 3 | 35. | amount | 11 |
| 8. | across | 3 | 36. | and | 806 |
| 9. | act | 40 | 37. | another | 13 |
| 10. | active | 11 | 38. | answer | 120 |
| 11. | actor | 2 | 39. | any | 80 |
| 12. | actual | 4 | 40. | appear | 2 |
| 13. | add | 30 | 41. | apply | 25 |
| 14. | address | 1 | 42. | appoint | 1 |
| 15. | admit | 1 | 43. | arm | 4 |
| 16. | advance | 7 | 44. | army | 9 |
| 17. | advantage | 41 | 45. | around | 8 |
| 18. | after | 30 | 46. | arrive | 3 |
| 19. | again | 26 | 47. | art | 9 |
| 20. | against | 1 | 48. | as | 149 |
| 21. | age | 2 | 49. | ask | 43 |
| 22. | agent | 6 | 50. | at | 111 |
| 23. | ago | 4 | 51. | attack | 2 |
| 24. | agree | 13 | 52. | August | 2 |
| 25. | air | 26 | 53. | average | 3 |
| 26. | all | 63 | 54. | away | 3 |
| 27. | allow | 16 | 55. | back | 23 |
| 28. | almost | 8 | 56. | bad | 7 |

Appendix Table 3 (Continued)

| | Word Families | Occurrences | Word Families | Occurrences | |
|-----|----------------------|--------------------|----------------------|--------------------|-----|
| 57. | ball | 1 | 85. | break | 13 |
| 58. | bank | 13 | 86. | bridge | 11 |
| 59. | base | 11 | 87. | bring | 3 |
| 60. | be | 1,481 | 88. | build | 36 |
| 61. | bear | 9 | 89. | burn | 4 |
| 62. | because | 33 | 90. | business | 10 |
| 63. | become | 6 | 91. | but | 66 |
| 64. | bed | 2 | 92. | buy | 11 |
| 65. | before | 50 | 93. | by | 137 |
| 66. | begin | 9 | 94. | call | 40 |
| 67. | behind | 2 | 95. | can | 280 |
| 68. | belong | 3 | 96. | car | 96 |
| 69. | below | 21 | 97. | care | 15 |
| 70. | beneath | 1 | 98. | carry | 27 |
| 71. | best | 50 | 99. | case | 10 |
| 72. | between | 17 | 100. | catch | 6 |
| 73. | big | 7 | 101. | cause | 5 |
| 74. | bill | 1 | 102. | centre | 8 |
| 75. | black | 2 | 103. | certain | 11 |
| 76. | blood | 7 | 104. | chance | 2 |
| 77. | blow | 7 | 105. | change | 36 |
| 78. | board | 16 | 106. | character | 5 |
| 79. | body | 20 | 107. | charge | 16 |
| 80. | book | 15 | 108. | child | 5 |
| 81. | both | 21 | 109. | choose | 53 |
| 82. | box | 9 | 110. | circle | 3 |
| 83. | branch | 8 | 111. | city | 6 |
| 84. | bread | 5 | 112. | claim | 3 |

Appendix Table 3 (Continued)

| Word Families | Occurrences | Word Families | Occurrences |
|----------------------|--------------------|----------------------|--------------------|
| 113. class | 31 | 141. cut | 27 |
| 114. clear | 24 | 142. danger | 11 |
| 115. close | 11 | 143. dark | 1 |
| 116. cold | 2 | 144. date | 12 |
| 117. college | 10 | 145. day | 19 |
| 118. color | 8 | 146. dead | 1 |
| 119. come | 11 | 147. deal | 1 |
| 120. command | 6 | 148. dear | 2 |
| 121. common | 14 | 149. decide | 27 |
| 122. company | 47 | 150. deep | 3 |
| 123. complete | 55 | 151. degree | 19 |
| 124. concern | 1 | 152. demand | 1 |
| 125. condition | 4 | 153. depend | 3 |
| 126. consider | 4 | 154. describe | 67 |
| 127. contain | 22 | 155. desire | 6 |
| 128. content | 1 | 156. detail | 11 |
| 129. continue | 11 | 157. develop | 44 |
| 130. control | 24 | 158. die | 5 |
| 131. corn | 3 | 159. difference | 59 |
| 132. cost | 15 | 160. difficult | 11 |
| 133. could | 22 | 161. direct | 12 |
| 134. count | 2 | 162. distance | 18 |
| 135. country | 18 | 163. divide | 7 |
| 136. course | 53 | 164. do | 369 |
| 137. court | 1 | 165. doctor | 11 |
| 138. cover | 26 | 166. dog | 1 |
| 139. cross | 3 | 167. door | 11 |
| 140. current | 4 | 168. down | 53 |

Appendix Table 3 (Continued)

| Word Families | Occurrences | Word Families | Occurrences |
|----------------|-------------|-----------------|-------------|
| 169. draw | 5 | 197. equal | 9 |
| 170. dream | 1 | 198. escape | 1 |
| 171. dress | 1 | 199. even | 7 |
| 172. drink | 7 | 200. evening | 1 |
| 173. drive | 25 | 201. event | 5 |
| 174. drop | 1 | 202. every | 21 |
| 175. dry | 1 | 203. example | 69 |
| 176. due | 1 | 204. except | 1 |
| 177. duty | 1 | 205. exchange | 13 |
| 178. each | 106 | 206. exist | 2 |
| 179. ear | 4 | 207. expect | 4 |
| 180. early | 8 | 208. expense | 20 |
| 181. earth | 2 | 209. experience | 17 |
| 182. easy | 31 | 210. experiment | 1 |
| 183. eat | 2 | 211. explain | 50 |
| 184. effect | 14 | 212. express | 20 |
| 185. efficient | 10 | 213. extend | 2 |
| 186. eight | 14 | 214. eye | 9 |
| 187. eleven | 2 | 215. face | 7 |
| 188. else | 1 | 216. fact | 1 |
| 189. empire | 3 | 217. factory | 4 |
| 190. employ | 8 | 218. fail | 2 |
| 191. end | 16 | 219. fall | 10 |
| 192. enemy | 1 | 220. familiar | 11 |
| 193. English | 37 | 221. family | 1 |
| 194. enjoy | 13 | 222. famous | 4 |
| 195. enough | 27 | 223. far | 17 |
| 196. enter | 12 | 224. farm | 1 |

Appendix Table 3 (Continued)

| Word Families | Occurrences | Word Families | Occurrences |
|---------------|-------------|---------------|-------------|
| 225. fast | 28 | 253. forth | 1 |
| 226. father | 3 | 254. four | 18 |
| 227. feeds | 3 | 255. free | 10 |
| 228. feel | 8 | 256. fresh | 3 |
| 229. few | 10 | 257. Friday | 7 |
| 230. field | 3 | 258. friend | 7 |
| 231. fight | 10 | 259. from | 142 |
| 232. figure | 3 | 260. front | 6 |
| 233. fill | 21 | 261. full | 8 |
| 234. find | 64 | 262. furnish | 2 |
| 235. fine | 1 | 263. future | 25 |
| 236. finish | 19 | 264. game | 19 |
| 237. fire | 8 | 265. garden | 4 |
| 238. first | 46 | 266. gas | 15 |
| 239. fish | 2 | 267. gate | 2 |
| 240. fit | 10 | 268. general | 5 |
| 241. five | 22 | 269. get | 54 |
| 242. fix | 7 | 270. give | 43 |
| 243. floor | 23 | 271. glass | 10 |
| 244. fly | 8 | 272. go | 73 |
| 245. follow | 17 | 273. god | 2 |
| 246. food | 4 | 274. good | 82 |
| 247. for | 379 | 275. great | 7 |
| 248. force | 9 | 276. green | 1 |
| 249. foreign | 2 | 277. ground | 13 |
| 250. forget | 4 | 278. group | 47 |
| 251. form | 74 | 279. grow | 3 |
| 252. former | 2 | 280. h | 19 |

Appendix Table 3 (Continued)

| | Word Families | Occurrences | Word Families | Occurrences | |
|------|----------------------|--------------------|----------------------|--------------------|-----|
| 281. | half | 4 | 309. | if | 64 |
| 282. | hand | 9 | 310. | ill | 1 |
| 283. | happen | 32 | 311. | important | 38 |
| 284. | happy | 7 | 312. | in | 724 |
| 285. | hard | 30 | 313. | inch | 3 |
| 286. | have | 293 | 314. | include | 12 |
| 287. | he | 117 | 315. | increase | 7 |
| 288. | head | 4 | 316. | independent | 3 |
| 289. | hear | 8 | 317. | industry | 22 |
| 290. | heart | 13 | 318. | instead | 8 |
| 291. | heat | 15 | 319. | interest | 10 |
| 292. | heavy | 12 | 320. | into | 49 |
| 293. | help | 88 | 321. | introduce | 8 |
| 294. | here | 28 | 322. | iron | 4 |
| 295. | high | 34 | 323. | it | 600 |
| 296. | hill | 4 | 324. | January | 1 |
| 297. | hold | 6 | 325. | join | 1 |
| 298. | home | 17 | 326. | joint | 2 |
| 299. | hope | 5 | 327. | jointed | 7 |
| 300. | hot | 9 | 328. | just | 13 |
| 301. | hour | 12 | 329. | keep | 20 |
| 302. | house | 4 | 330. | kill | 2 |
| 303. | how | 189 | 331. | kind | 24 |
| 304. | however | 13 | 332. | king | 1 |
| 305. | human | 14 | 333. | know | 38 |
| 306. | hundred | 7 | 334. | lack | 2 |
| 307. | I | 471 | 335. | land | 6 |
| 308. | idea | 8 | 336. | language | 34 |

Appendix Table 3 (Continued)

| Word Families | Occurrences | Word Families | Occurrences |
|----------------------|--------------------|----------------------|--------------------|
| 337. large | 28 | 365. low | 12 |
| 338. last | 14 | 366. machine | 39 |
| 339. late | 15 | 367. main | 21 |
| 340. lay | 5 | 368. make | 236 |
| 341. lead | 1 | 369. man | 1 |
| 342. learn | 3 | 370. manufacture | 34 |
| 343. leave | 5 | 371. many | 28 |
| 344. left | 15 | 372. march | 1 |
| 345. length | 6 | 373. mark | 5 |
| 346. less | 33 | 374. mass | 7 |
| 347. let | 2 | 375. master | 3 |
| 348. letter | 8 | 376. material | 71 |
| 349. level | 6 | 377. may | 50 |
| 350. library | 3 | 378. maybe | 3 |
| 351. life | 9 | 379. mean | 42 |
| 352. lift | 20 | 380. measure | 5 |
| 353. light | 38 | 381. meet | 8 |
| 354. like | 96 | 382. memory | 4 |
| 355. likely | 4 | 383. mention | 5 |
| 356. limit | 7 | 384. mere | 1 |
| 357. line | 14 | 385. metal | 42 |
| 358. listen | 122 | 386. might | 39 |
| 359. little | 11 | 387. million | 5 |
| 360. live | 15 | 388. miner | 8 |
| 361. local | 4 | 389. minute | 14 |
| 362. long | 46 | 390. miss | 7 |
| 363. look | 56 | 391. mister | 1 |
| 364. lose | 4 | 392. modern | 3 |

Appendix Table 3 (Continued)

| | Word Families | Occurrences | Word Families | Occurrences |
|------|----------------------|--------------------|----------------------|--------------------|
| 393. | moment | 1 | 421. next | 9 |
| 394. | Monday | 6 | 422. night | 4 |
| 395. | money | 6 | 423. nine | 5 |
| 396. | month | 10 | 424. no | 79 |
| 397. | moon | 1 | 425. not | 281 |
| 398. | more | 87 | 426. note | 45 |
| 399. | morning | 4 | 427. notice | 3 |
| 400. | most | 72 | 428. now | 57 |
| 401. | mother | 4 | 429. number | 1,838 |
| 402. | motor | 30 | 430. numerical | 1 |
| 403. | mountain | 2 | 431. object | 27 |
| 404. | mouth | 2 | 432. observe | 1 |
| 405. | move | 43 | 433. October | 1 |
| 406. | Mrs. | 1 | 434. of | 749 |
| 407. | much | 40 | 437. off | 36 |
| 408. | music | 27 | 436. offer | 3 |
| 409. | must | 57 | 437. office | 17 |
| 410. | name | 26 | 438. often | 20 |
| 411. | nation | 2 | 439. oh | 3 |
| 412. | native | 1 | 440. oil | 5 |
| 413. | nature | 3 | 441. old | 11 |
| 414. | near | 11 | 442. on | 217 |
| 415. | necessary | 9 | 443. once | 4 |
| 416. | need | 62 | 444. one | 90 |
| 417. | never | 13 | 445. only | 14 |
| 418. | new | 62 | 446. open | 10 |
| 419. | news | 1 | 447. operate | 46 |
| 420. | newspaper | 1 | 448. opinion | 10 |

Appendix Table 3 (Continued)

| Word Families | Occurrences | Word Families | Occurrences |
|----------------------|--------------------|----------------------|--------------------|
| 449. opportunity | 6 | 477. please | 3 |
| 450. or | 175 | 478. point | 18 |
| 451. order | 31 | 479. poor | 3 |
| 452. ordinary | 2 | 480. popular | 4 |
| 453. organize | 5 | 481. position | 14 |
| 454. other | 63 | 482. possible | 21 |
| 455. out | 115 | 483. post | 4 |
| 456. over | 22 | 484. power | 58 |
| 457. own | 25 | 485. prepare | 15 |
| 458. page | 7 | 486. present | 48 |
| 459. paint | 9 | 487. press | 5 |
| 460. paper | 12 | 488. pressure | 18 |
| 461. part | 53 | 498. pretty | 1 |
| 462. particular | 7 | 490. prevent | 5 |
| 463. pass | 13 | 491. price | 7 |
| 464. past | 53 | 492. problem | 57 |
| 465. pay | 11 | 493. produce | 48 |
| 466. people | 79 | 494. product | 37 |
| 467. per | 7 | 495. progress | 18 |
| 468. perhaps | 1 | 496. promise | 1 |
| 469. permit | 1 | 497. proof | 5 |
| 470. person | 40 | 498. proper | 1 |
| 471. picture | 29 | 499. property | 10 |
| 472. piece | 7 | 500. propose | 3 |
| 473. place | 27 | 501. protect | 16 |
| 474. plan | 11 | 502. provide | 32 |
| 475. plant | 16 | 503. public | 15 |
| 476. play | 25 | 504. pull | 1 |

Appendix Table 3 (Continued)

| Word Families | Occurrences | Word Families | Occurrences |
|----------------|-------------|----------------|-------------|
| 505. purpose | 2 | 533. report | 20 |
| 506. put | 28 | 534. represent | 2 |
| 507. quality | 10 | 535. rest | 5 |
| 508. quantity | 11 | 536. result | 6 |
| 509. question | 128 | 537. return | 4 |
| 510. quite | 10 | 538. ride | 11 |
| 511. race | 7 | 539. right | 35 |
| 512. raise | 2 | 540. ring | 1 |
| 513. rate | 1 | 541. rise | 2 |
| 514. rather | 3 | 542. river | 1 |
| 515. reach | 6 | 543. road | 10 |
| 516. read | 99 | 544. rock | 2 |
| 517. ready | 4 | 545. roll | 1 |
| 518. real | 19 | 546. room | 6 |
| 519. realize | 2 | 547. rough | 4 |
| 520. reason | 28 | 548. round | 8 |
| 521. receive | 10 | 549. rule | 4 |
| 522. recent | 6 | 550. run | 21 |
| 523. recognize | 6 | 551. safe | 63 |
| 524. record | 32 | 552. sale | 4 |
| 525. red | 1 | 553. same | 33 |
| 526. reduce | 10 | 554. save | 5 |
| 527. regard | 2 | 555. say | 23 |
| 528. relation | 3 | 556. scene | 1 |
| 529. relative | 13 | 557. school | 8 |
| 530. remain | 3 | 558. science | 5 |
| 531. remember | 13 | 559. sea | 2 |
| 532. reply | 5 | 560. season | 1 |

Appendix Table 3 (Continued)

| Word Families | Occurrences | Word Families | Occurrences |
|----------------------|--------------------|----------------------|--------------------|
| 561. seat | 2 | 589. simple | 46 |
| 562. second | 13 | 590. since | 10 |
| 563. see | 26 | 591. sing | 1 |
| 564. seem | 1 | 592. single | 4 |
| 565. sell | 9 | 593. sit | 1 |
| 566. send | 25 | 594. situation | 5 |
| 567. sense | 1 | 595. six | 14 |
| 568. sensitive | 9 | 596. size | 10 |
| 569. separate | 1 | 597. small | 25 |
| 570. September | 5 | 598. smile | 1 |
| 571. serious | 4 | 599. snow | 5 |
| 572. serve | 2 | 600. so | 52 |
| 573. service | 8 | 601. social | 3 |
| 574. set | 27 | 602. society | 5 |
| 575. seven | 4 | 603. soft | 5 |
| 576. several | 6 | 604. some | 100 |
| 577. shake | 1 | 605. son | 2 |
| 578. shape | 24 | 606. soon | 2 |
| 579. share | 6 | 607. sort | 8 |
| 580. she | 54 | 608. sound | 17 |
| 581. shoot | 7 | 609. south | 1 |
| 582. short | 53 | 610. space | 9 |
| 583. should | 70 | 611. speak | 41 |
| 584. show | 15 | 612. special | 22 |
| 585. side | 15 | 613. speed | 17 |
| 586. sign | 18 | 614. spend | 6 |
| 587. silence | 6 | 615. spot | 17 |
| 588. silver | 1 | 616. spread | 2 |

Appendix Table 3 (Continued)

| Word Families | Occurrences | Word Families | Occurrences |
|----------------------|--------------------|----------------------|--------------------|
| 617. spring | 14 | 645. summer | 1 |
| 618. square | 4 | 646. sun | 4 |
| 619. stage | 45 | 647. supply | 10 |
| 620. stand | 4 | 648. support | 25 |
| 621. standard | 4 | 649. suppose | 2 |
| 622. star | 2 | 650. sure | 8 |
| 623. start | 49 | 651. surface | 12 |
| 624. state | 29 | 652. system | 48 |
| 625. station | 5 | 653. table | 48 |
| 626. stay | 1 | 654. take | 59 |
| 627. steel | 58 | 655. talk | 18 |
| 628. step | 6 | 656. teach | 8 |
| 629. still | 8 | 657. tell | 11 |
| 630. stop | 8 | 658. ten | 20 |
| 631. store | 16 | 659. term | 38 |
| 632. story | 1 | 660. test | 18 |
| 633. strange | 1 | 661. than | 66 |
| 634. street | 6 | 662. the | 2123 |
| 635. strength | 9 | 663. then | 56 |
| 636. strike | 8 | 664. there | 65 |
| 637. strong | 41 | 665. therefore | 2 |
| 638. student | 82 | 666. they | 279 |
| 639. study | 74 | 667. thing | 43 |
| 640. subject | 76 | 668. think | 67 |
| 641. substance | 3 | 669. thirteen | 1 |
| 642. succeed | 6 | 670. thirty | 3 |
| 643. such | 27 | 671. this | 484 |
| 644. suggest | 4 | 672. though | 2 |

Appendix Table 3 (Continued)

| | Word Families | Occurrences | Word Families | Occurrences |
|------|----------------------|--------------------|----------------------|--------------------|
| 673. | thousand | 2 | 701. unless | 1 |
| 674. | three | 32 | 702. until | 9 |
| 675. | through | 19 | 703. up | 79 |
| 676. | Thursday | 1 | 704. use | 444 |
| 677. | time | 80 | 705. usual | 6 |
| 678. | to | 1055 | 706. value | 2 |
| 679. | today | 11 | 707. variety | 2 |
| 680. | together | 18 | 708. very | 63 |
| 681. | too | 11 | 709. view | 10 |
| 682. | top | 10 | 710. village | 1 |
| 683. | touch | 6 | 711. visit | 9 |
| 684. | town | 1 | 712. voice | 13 |
| 686. | train | 14 | 713. wait | 3 |
| 686. | travel | 38 | 714. walk | 8 |
| 687. | trouble | 1 | 715. wall | 2 |
| 688. | true | 18 | 716. want | 32 |
| 689. | try | 31 | 717. war | 2 |
| 690. | Tuesday | 3 | 718. watch | 5 |
| 691. | turn | 46 | 719. water | 30 |
| 692. | twelve | 3 | 720. wave | 2 |
| 693. | twenty | 11 | 721. way | 60 |
| 694. | two | 84 | 722. we | 220 |
| 695. | type | 28 | 723. wear | 35 |
| 696. | under | 9 | 724. Wednesday | 4 |
| 697. | understand | 26 | 725. week | 11 |
| 698. | union | 2 | 726. well | 26 |
| 699. | unite | 112 | 727. western | 1 |
| 700. | university | 8 | 728. what | 245 |

Appendix Table 3 (Continued)

| Word Families | Occurrences | Word Families | Occurrences |
|----------------------|--------------------|----------------------|--------------------|
| 729. when | 135 | 744. woman | 3 |
| 730. where | 41 | 745. wood | 12 |
| 731. whether | 3 | 746. word | 127 |
| 732. which | 202 | 747. work | 269 |
| 733. whole | 1 | 748. world | 30 |
| 734. why | 46 | 749. would | 44 |
| 735. wide | 9 | 750. wound | 1 |
| 736. will | 135 | 751. write | 51 |
| 737. wind | 13 | 752. wrong | 4 |
| 738. window | 9 | 753. year | 36 |
| 739. winter | 1 | 754. yes | 54 |
| 740. wish | 1 | 755. yesterday | 3 |
| 741. with | 248 | 756. yet | 1 |
| 742. within | 3 | 757. you | 734 |
| 743. without | 18 | | |

Appendix Table 4 General Service Words in RU1 Corpus Found in the First 1,000
Most Occurring in the GSL

| | Word Families | Occurrences | Word Families | Occurrences | |
|-----|---------------|-------------|---------------|-------------|-----|
| 1. | a | 1,176 | 29. | almost | 5 |
| 2. | able | 66 | 30. | alone | 1 |
| 3. | about | 197 | 31. | along | 3 |
| 4. | above | 15 | 32. | already | 5 |
| 5. | accept | 3 | 33. | also | 36 |
| 6. | accord | 1 | 34. | although | 4 |
| 7. | account | 4 | 35. | always | 9 |
| 8. | across | 7 | 36. | amount | 16 |
| 9. | act | 56 | 37. | and | 813 |
| 10. | active | 20 | 38. | animal | 2 |
| 11. | actual | 3 | 39. | another | 24 |
| 12. | add | 26 | 40. | answer | 73 |
| 13. | address | 3 | 41. | any | 61 |
| 14. | admit | 2 | 42. | appear | 6 |
| 15. | advance | 2 | 43. | apply | 25 |
| 16. | advantage | 27 | 44. | arm | 2 |
| 17. | adventure | 1 | 45. | army | 2 |
| 18. | affair | 1 | 46. | around | 11 |
| 19. | after | 41 | 47. | arrive | 4 |
| 20. | again | 31 | 48. | article | 7 |
| 21. | against | 6 | 49. | as | 168 |
| 22. | age | 4 | 50. | ask | 47 |
| 23. | agent | 6 | 51. | associate | 1 |
| 24. | ago | 3 | 52. | at | 224 |
| 25. | agree | 8 | 53. | attempt | 2 |
| 26. | air | 30 | 54. | august | 2 |
| 27. | all | 51 | 55. | average | 4 |
| 28. | allow | 30 | 56. | away | 7 |

Appendix Table 4 (Continued)

| Word Families | Occurrences | Word Families | Occurrences |
|----------------------|--------------------|----------------------|--------------------|
| 57. back | 25 | 85. boat | 4 |
| 58. bad | 3 | 86. body | 3 |
| 59. ball | 4 | 87. book | 2 |
| 60. bank | 11 | 88. both | 13 |
| 61. bar | 1 | 89. box | 13 |
| 62. base | 31 | 90. boy | 2 |
| 63. be | 1,514 | 91. bread | 2 |
| 64. bear | 6 | 92. break | 12 |
| 65. because | 27 | 93. bridge | 53 |
| 66. become | 26 | 94. bright | 1 |
| 67. bed | 3 | 95. bring | 2 |
| 68. before | 31 | 96. broad | 2 |
| 69. begin | 16 | 97. build | 74 |
| 70. behind | 2 | 98. burn | 1 |
| 71. believe | 11 | 99. business | 5 |
| 72. belong | 1 | 100. but | 67 |
| 73. below | 19 | 101. buy | 2 |
| 74. beside | 6 | 102. by | 136 |
| 75. best | 28 | 103. call | 25 |
| 76. between | 25 | 104. can | 269 |
| 77. beyond | 1 | 105. car | 13 |
| 78. big | 7 | 106. care | 6 |
| 79. bill | 1 | 107. carry | 13 |
| 80. bird | 4 | 108. case | 12 |
| 81. black | 1 | 109. catch | 2 |
| 82. blood | 4 | 110. cause | 25 |
| 83. blow | 3 | 111. centre | 14 |
| 84. board | 10 | 112. certain | 16 |

Appendix Table 4 (Continued)

| | Word Families | Occurrences | Word Families | Occurrences |
|------|----------------------|--------------------|----------------------|--------------------|
| 113. | Change | 42 | 141. cost | 30 |
| 114. | character | 1 | 142. cotton | 1 |
| 115. | charge | 7 | 143. could | 85 |
| 116. | child | 2 | 144. country | 8 |
| 117. | choose | 20 | 145. course | 50 |
| 118. | circle | 1 | 146. cover | 16 |
| 119. | city | 20 | 147. cross | 6 |
| 120. | class | 11 | 148. crowd | 1 |
| 121. | clear | 17 | 149. crown | 3 |
| 122. | close | 17 | 150. current | 23 |
| 123. | cloud | 1 | 151. cut | 15 |
| 124. | coal | 5 | 152. danger | 4 |
| 125. | coast | 3 | 153. dark | 2 |
| 126. | cold | 4 | 154. date | 17 |
| 127. | college | 18 | 155. day | 29 |
| 128. | color | 7 | 156. deal | 8 |
| 129. | come | 32 | 157. dear | 6 |
| 130. | command | 1 | 158. December | 1 |
| 131. | common | 18 | 159. decide | 37 |
| 132. | company | 41 | 160. deep | 10 |
| 133. | complete | 68 | 161. degree | 15 |
| 134. | concern | 2 | 162. department | 18 |
| 135. | condition | 27 | 163. depend | 5 |
| 136. | consider | 6 | 164. describe | 57 |
| 137. | contain | 15 | 165. destroy | 8 |
| 138. | content | 2 | 166. detail | 22 |
| 139. | continue | 50 | 167. determine | 2 |
| 140. | control | 32 | 168. develop | 26 |

Appendix Table 4 (Continued)

| Word Families | Occurrences | Word Families | Occurrences |
|-----------------|-------------|-----------------|-------------|
| 169. die | 1 | 197. eight | 8 |
| 170. difference | 68 | 198. either | 5 |
| 171. difficult | 6 | 199. else | 3 |
| 172. direct | 33 | 200. employ | 13 |
| 173. discover | 3 | 201. end | 17 |
| 174. distance | 4 | 202. enemy | 3 |
| 175. divide | 2 | 203. English | 17 |
| 176. do | 335 | 204. enjoy | 7 |
| 177. doctor | 1 | 205. enough | 29 |
| 178. door | 20 | 206. enter | 12 |
| 179. down | 25 | 207. equal | 1 |
| 180. draw | 8 | 208. escape | 3 |
| 181. drink | 2 | 209. even | 10 |
| 182. drive | 13 | 210. event | 11 |
| 183. drop | 8 | 211. ever | 10 |
| 184. dry | 2 | 212. every | 15 |
| 185. due | 2 | 213. example | 55 |
| 186. each | 88 | 214. except | 2 |
| 187. ear | 2 | 215. exchange | 10 |
| 188. early | 8 | 216. exist | 3 |
| 189. earth | 21 | 217. expect | 12 |
| 190. east | 4 | 218. expense | 5 |
| 191. easy | 12 | 219. experience | 17 |
| 192. eat | 5 | 220. experiment | 2 |
| 193. effect | 22 | 221. explain | 24 |
| 194. efficient | 11 | 222. express | 29 |
| 195. effort | 1 | 223. extend | 6 |
| 196. egg | 1 | 224. eye | 2 |

Appendix Table 4 (Continued)

| Word Families | Occurrences | Word Families | Occurrences |
|----------------------|--------------------|----------------------|--------------------|
| 225. face | 5 | 253. five | 16 |
| 226. fact | 6 | 254. fix | 13 |
| 227. factory | 4 | 255. floor | 2 |
| 228. fail | 3 | 256. flow | 11 |
| 229. fair | 1 | 257. fly | 9 |
| 230. faith | 1 | 258. follow | 38 |
| 231. fall | 20 | 259. food | 27 |
| 232. family | 4 | 260. for | 293 |
| 233. famous | 3 | 261. force | 8 |
| 234. far | 19 | 262. forest | 1 |
| 235. farm | 15 | 263. forget | 7 |
| 236. fast | 10 | 264. form | 72 |
| 237. father | 1 | 265. fortune | 1 |
| 238. favor | 2 | 266. four | 25 |
| 239. feeds | 8 | 267. free | 7 |
| 240. feel | 12 | 268. fresh | 1 |
| 241. few | 12 | 269. friend | 5 |
| 242. field | 12 | 270. from | 180 |
| 243. fight | 3 | 271. front | 9 |
| 244. figure | 5 | 272. full | 5 |
| 245. fill | 6 | 273. furnish | 2 |
| 246. find | 49 | 274. future | 41 |
| 247. fine | 2 | 275. gain | 5 |
| 248. finish | 18 | 276. game | 3 |
| 249. fire | 23 | 277. garden | 2 |
| 250. first | 61 | 278. gas | 16 |
| 251. fish | 6 | 279. gather | 2 |
| 252. fit | 13 | 280. general | 17 |

Appendix Table 4 (Continued)

| Word Families | Occurrences | Word Families | Occurrences |
|---------------|-------------|----------------|-------------|
| 281. gentle | 1 | 309. hill | 5 |
| 282. get | 54 | 310. history | 9 |
| 283. give | 61 | 311. hold | 11 |
| 284. glass | 2 | 312. home | 31 |
| 285. go | 80 | 313. hope | 5 |
| 286. good | 46 | 314. horse | 2 |
| 287. great | 17 | 315. hot | 1 |
| 288. green | 1 | 316. hour | 12 |
| 289. ground | 15 | 317. house | 26 |
| 290. group | 56 | 318. how | 174 |
| 291. grow | 12 | 319. however | 8 |
| 292. h | 8 | 320. human | 5 |
| 293. half | 4 | 321. hundred | 9 |
| 294. hand | 9 | 322. I | 443 |
| 295. hang | 1 | 323. idea | 16 |
| 296. happen | 29 | 324. if | 84 |
| 297. happy | 5 | 325. important | 24 |
| 298. hard | 7 | 326. in | 767 |
| 299. hardly | 1 | 327. include | 31 |
| 300. have | 326 | 328. increase | 19 |
| 301. he | 134 | 329. industry | 21 |
| 302. head | 4 | 330. instead | 6 |
| 303. hear | 16 | 331. interest | 24 |
| 304. heat | 40 | 332. into | 48 |
| 305. heavy | 7 | 333. introduce | 13 |
| 306. help | 43 | 334. it | 330 |
| 307. here | 30 | 335. January | 1 |
| 308. high | 45 | 336. join | 1 |

Appendix Table 4 (Continued)

| Word Families | Occurrences | Word Families | Occurrences |
|----------------------|--------------------|----------------------|--------------------|
| 337. joint | 2 | 365. lift | 12 |
| 338. jointed | 6 | 366. light | 28 |
| 339. judge | 1 | 367. like | 51 |
| 340. just | 16 | 368. likely | 2 |
| 341. keep | 16 | 369. limit | 2 |
| 342. kill | 7 | 370. line | 17 |
| 343. kind | 10 | 371. listen | 99 |
| 344. know | 63 | 372. little | 12 |
| 345. lake | 1 | 373. live | 8 |
| 346. land | 21 | 374. local | 9 |
| 347. language | 21 | 375. long | 33 |
| 348. large | 30 | 376. look | 63 |
| 349. last | 21 | 377. lose | 3 |
| 350. late | 7 | 378. loss | 1 |
| 351. law | 1 | 379. love | 4 |
| 352. lay | 1 | 380. low | 30 |
| 353. lead | 9 | 381. machine | 37 |
| 354. learn | 27 | 382. main | 27 |
| 355. leave | 5 | 383. make | 187 |
| 356. left | 7 | 384. man | 6 |
| 357. length | 1 | 385. manner | 2 |
| 358. less | 32 | 386. manufacture | 23 |
| 359. let | 9 | 387. many | 36 |
| 360. letter | 12 | 388. march | 1 |
| 361. level | 12 | 389. mark | 8 |
| 362. library | 1 | 390. market | 4 |
| 363. lie | 1 | 391. marry | 1 |
| 364. life | 7 | 392. mass | 4 |

Appendix Table 4 (Continued)

| | Word Families | Occurrences | Word Families | Occurrences |
|------|----------------------|--------------------|----------------------|--------------------|
| 393. | material | 33 | 421. most | 50 |
| 394. | matter | 3 | 422. motor | 10 |
| 395. | may | 21 | 423. mouth | 1 |
| 396. | maybe | 3 | 424. move | 67 |
| 397. | mean | 28 | 425. Mrs. | 2 |
| 398. | measure | 14 | 426. much | 40 |
| 399. | meet | 17 | 427. music | 4 |
| 400. | member | 2 | 428. must | 56 |
| 401. | memory | 2 | 429. name | 21 |
| 402. | mention | 10 | 430. nation | 3 |
| 403. | metal | 6 | 431. nature | 7 |
| 404. | middle | 6 | 432. near | 15 |
| 405. | might | 9 | 433. necessary | 15 |
| 406. | mile | 4 | 434. necessity | 4 |
| 407. | milk | 6 | 437. need | 39 |
| 408. | million | 2 | 436. never | 3 |
| 409. | mind | 8 | 437. new | 73 |
| 410. | miner | 5 | 438. newspaper | 2 |
| 411. | minute | 11 | 439. next | 26 |
| 412. | miss | 3 | 440. night | 2 |
| 413. | mister | 10 | 441. nine | 5 |
| 414. | modern | 8 | 442. no | 43 |
| 415. | moment | 8 | 443. nor | 2 |
| 416. | Monday | 3 | 444. north | 8 |
| 417. | money | 7 | 445. not | 245 |
| 418. | month | 19 | 446. note | 77 |
| 419. | more | 81 | 447. notice | 9 |
| 420. | morning | 5 | 448. November | 1 |

Appendix Table 4 (Continued)

| Word Families | Occurrences | Word Families | Occurrences |
|----------------------|--------------------|----------------------|--------------------|
| 449. now | 60 | 477. out | 53 |
| 450. number | 754 | 478. over | 29 |
| 451. numerical | 1 | 479. own | 19 |
| 452. object | 23 | 480. paint | 17 |
| 453. occasion | 1 | 481. paper | 4 |
| 454. of | 841 | 482. part | 63 |
| 455. off | 22 | 483. particular | 7 |
| 456. offer | 4 | 484. pass | 23 |
| 457. office | 10 | 485. past | 72 |
| 458. official | 1 | 486. pay | 4 |
| 459. often | 30 | 487. people | 43 |
| 460. oh | 1 | 488. per | 16 |
| 461. oil | 30 | 498. perhaps | 3 |
| 462. old | 8 | 490. permit | 11 |
| 463. on | 235 | 491. person | 19 |
| 464. once | 12 | 492. picture | 21 |
| 465. one | 97 | 493. piece | 14 |
| 466. only | 29 | 494. place | 35 |
| 467. open | 8 | 495. plan | 22 |
| 468. operate | 24 | 496. plant | 21 |
| 469. opinion | 2 | 497. play | 15 |
| 470. opportunity | 9 | 498. please | 20 |
| 471. or | 189 | 499. point | 44 |
| 472. order | 29 | 500. political | 1 |
| 473. ordinary | 1 | 501. poor | 3 |
| 474. organize | 4 | 502. popular | 3 |
| 475. other | 84 | 503. population | 3 |
| 476. otherwise | 1 | 504. position | 27 |

Appendix Table 4 (Continued)

| Word Families | Occurrences | Word Families | Occurrences |
|----------------------|--------------------|----------------------|--------------------|
| 505. possible | 44 | 533. quality | 7 |
| 506. post | 12 | 534. quantity | 1 |
| 507. pound | 1 | 535. quarter | 3 |
| 508. power | 44 | 536. question | 107 |
| 509. prepare | 30 | 537. quite | 10 |
| 510. present | 97 | 538. race | 1 |
| 511. press | 6 | 539. raise | 6 |
| 512. pressure | 19 | 540. rate | 2 |
| 513. prevent | 24 | 541. rather | 6 |
| 514. price | 4 | 542. reach | 15 |
| 515. private | 3 | 543. read | 78 |
| 516. problem | 32 | 544. ready | 2 |
| 517. produce | 28 | 545. real | 17 |
| 518. product | 51 | 546. realize | 4 |
| 519. profit | 2 | 547. reason | 13 |
| 520. progress | 18 | 548. receipt | 1 |
| 521. promise | 5 | 549. receive | 4 |
| 522. proof | 2 | 550. recent | 5 |
| 523. proper | 5 | 551. recognize | 3 |
| 524. property | 12 | 552. record | 10 |
| 525. propose | 10 | 553. red | 1 |
| 526. protect | 8 | 554. reduce | 22 |
| 527. prove | 1 | 555. refuse | 1 |
| 528. provide | 38 | 556. regard | 2 |
| 529. public | 5 | 557. relation | 13 |
| 530. pull | 2 | 558. relative | 19 |
| 531. purpose | 14 | 559. remain | 2 |
| 532. put | 20 | 560. remember | 10 |

Appendix Table 4 (Continued)

| Word Families | Occurrences | Word Families | Occurrences |
|----------------------|--------------------|----------------------|--------------------|
| 561. reply | 4 | 589. season | 3 |
| 562. report | 70 | 590. seat | 4 |
| 563. represent | 6 | 591. second | 24 |
| 564. reserve | 2 | 592. secret | 1 |
| 565. respect | 2 | 593. secretary | 1 |
| 566. rest | 6 | 594. see | 33 |
| 567. result | 18 | 595. seem | 3 |
| 568. return | 6 | 596. sell | 4 |
| 569. ride | 1 | 597. send | 20 |
| 570. right | 15 | 598. sense | 3 |
| 571. ring | 4 | 599. sensitive | 1 |
| 572. rise | 14 | 600. separate | 7 |
| 573. river | 13 | 601. September | 3 |
| 574. road | 11 | 602. serious | 3 |
| 575. rock | 4 | 603. service | 7 |
| 576. roll | 4 | 604. set | 12 |
| 577. room | 13 | 605. settle | 2 |
| 578. rough | 8 | 606. seven | 5 |
| 579. round | 8 | 607. several | 13 |
| 580. rule | 5 | 608. shape | 9 |
| 581. run | 16 | 609. share | 6 |
| 582. safe | 30 | 610. she | 36 |
| 583. same | 24 | 611. ship | 32 |
| 584. save | 22 | 612. shore | 7 |
| 585. say | 52 | 613. short | 18 |
| 586. school | 19 | 614. should | 34 |
| 587. science | 6 | 615. show | 40 |
| 588. sea | 17 | 616. side | 19 |

Appendix Table 4 (Continued)

| Word Families | Occurrences | Word Families | Occurrences |
|----------------------|--------------------|----------------------|--------------------|
| 617. sight | 4 | 645. spend | 9 |
| 618. sign | 6 | 646. spot | 12 |
| 619. silence | 2 | 647. square | 15 |
| 620. simple | 67 | 648. stage | 10 |
| 621. since | 10 | 649. stand | 8 |
| 622. sing | 1 | 650. standard | 9 |
| 623. single | 3 | 651. start | 35 |
| 624. sir | 2 | 652. state | 30 |
| 625. sit | 6 | 653. station | 4 |
| 626. situation | 11 | 654. stay | 3 |
| 627. six | 20 | 655. steel | 4 |
| 628. size | 5 | 656. step | 7 |
| 629. sleep | 1 | 657. still | 8 |
| 630. small | 27 | 658. stone | 6 |
| 631. smile | 1 | 659. top | 17 |
| 632. snow | 1 | 660. store | 7 |
| 633. so | 75 | 661. story | 2 |
| 634. soft | 9 | 662. stream | 3 |
| 635. soldier | 5 | 663. street | 5 |
| 636. some | 95 | 664. strength | 4 |
| 637. soon | 7 | 665. strike | 2 |
| 638. sort | 9 | 666. strong | 8 |
| 639. sound | 30 | 667. student | 47 |
| 640. south | 4 | 668. study | 78 |
| 641. space | 10 | 669. subject | 32 |
| 642. speak | 64 | 670. substance | 1 |
| 643. special | 17 | 671. succeed | 9 |
| 644. speed | 38 | 672. such | 45 |

Appendix Table 4 (Continued)

| Word Families | Occurrences | Word Families | Occurrences |
|----------------------|--------------------|----------------------|--------------------|
| 673. suffer | 2 | 701. think | 65 |
| 674. suggest | 6 | 702. thirteen | 2 |
| 675. summer | 2 | 703. this | 629 |
| 676. sun | 1 | 704. though | 1 |
| 677. Sunday | 1 | 705. thousand | 6 |
| 678. supply | 16 | 706. three | 39 |
| 679. support | 13 | 707. through | 32 |
| 680. suppose | 1 | 708. throw | 2 |
| 681. sure | 15 | 709. Thursday | 4 |
| 682. surface | 15 | 710. till | 2 |
| 683. surround | 5 | 711. time | 93 |
| 684. sweet | 3 | 712. to | 1,225 |
| 686. system | 62 | 713. today | 14 |
| 686. table | 23 | 714. together | 20 |
| 687. take | 66 | 715. too | 7 |
| 688. talk | 68 | 716. top | 15 |
| 689. teach | 7 | 717. total | 2 |
| 690. tell | 34 | 718. touch | 5 |
| 691. ten | 5 | 719. toward | 2 |
| 692. term | 9 | 720. town | 8 |
| 693. test | 14 | 721. trade | 1 |
| 694. than | 48 | 722. train | 21 |
| 695. the | 2,472 | 723. travel | 14 |
| 696. then | 49 | 724. tree | 2 |
| 697. there | 126 | 725. true | 18 |
| 698. therefore | 1 | 726. trust | 1 |
| 699. they | 218 | 727. try | 15 |
| 700. thing | 43 | 728. Tuesday | 1 |

Appendix Table 4 (Continued)

| Word Families | Occurrences | Word Families | Occurrences |
|----------------------|--------------------|----------------------|--------------------|
| 729. turn | 18 | 757. war | 1 |
| 730. twelve | 2 | 758. watch | 5 |
| 731. twenty | 3 | 759. water | 98 |
| 732. two | 75 | 760. wave | 20 |
| 733. type | 34 | 761. way | 61 |
| 734. under | 14 | 762. we | 288 |
| 735. understand | 25 | 763. wear | 7 |
| 736. unite | 93 | 764. week | 29 |
| 737. university | 26 | 765. well | 33 |
| 738. unless | 7 | 766. west | 3 |
| 739. until | 17 | 767. what | 218 |
| 740. up | 46 | 768. when | 138 |
| 741. use | 435 | 769. where | 38 |
| 742. usual | 17 | 770. whether | 5 |
| 743. valley | 3 | 771. which | 166 |
| 744. value | 8 | 772. while | 19 |
| 745. variety | 3 | 773. white | 3 |
| 746. various | 1 | 774. who | 35 |
| 747. very | 51 | 775. whole | 7 |
| 748. vessel | 4 | 776. why | 47 |
| 749. view | 7 | 777. wide | 16 |
| 750. village | 3 | 778. will | 157 |
| 751. visit | 7 | 779. win | 3 |
| 752. voice | 4 | 780. wind | 32 |
| 753. wait | 1 | 781. window | 4 |
| 754. walk | 11 | 782. winter | 3 |
| 755. wall | 18 | 783. wish | 5 |
| 756. want | 30 | 784. with | 251 |

Appendix Table 4 (Continued)

| Word Families | Occurrences | Word Families | Occurrences |
|----------------------|--------------------|----------------------|--------------------|
| 785. within | 8 | 794. write | 56 |
| 786. without | 15 | 795. wrong | 3 |
| 787. woman | 3 | 796. year | 58 |
| 788. wonder | 7 | 797. yes | 22 |
| 789. wood | 12 | 798. yesterday | 6 |
| 790. word | 83 | 799. yield | 3 |
| 791. work | 178 | 800. you | 627 |
| 792. world | 16 | 801. young | 1 |
| 793. would | 69 | | |

Appendix Table 5 General Service Words in RMUT Corpus Found in the First 1,000 Most Occurring in the GSL

| | Word Families | Occurrences | Word Families | Occurrences | |
|-----|----------------------|--------------------|----------------------|--------------------|-----|
| 1. | a | 206 | 29. | answer | 14 |
| 2. | able | 9 | 30. | any | 4 |
| 3. | about | 16 | 31. | apply | 3 |
| 4. | above | 2 | 32. | around | 7 |
| 5. | accord | 5 | 33. | article | 4 |
| 6. | account | 1 | 34. | as | 72 |
| 7. | across | 1 | 35. | ask | 2 |
| 8. | act | 4 | 36. | at | 14 |
| 9. | active | 5 | 37. | average | 6 |
| 10. | actual | 2 | 38. | away | 3 |
| 11. | add | 6 | 39. | back | 4 |
| 12. | advance | 1 | 40. | bad | 3 |
| 13. | advantage | 1 | 41. | bar | 2 |
| 14. | after | 13 | 42. | base | 6 |
| 15. | again | 2 | 43. | be | 379 |
| 16. | against | 3 | 44. | beauty | 7 |
| 17. | ago | 1 | 45. | because | 14 |
| 18. | air | 2 | 46. | become | 3 |
| 19. | all | 6 | 47. | before | 2 |
| 20. | allow | 1 | 48. | begin | 3 |
| 21. | almost | 4 | 49. | belong | 2 |
| 22. | already | 1 | 50. | below | 6 |
| 23. | also | 8 | 51. | best | 6 |
| 24. | although | 2 | 52. | between | 3 |
| 25. | amount | 2 | 53. | big | 14 |
| 26. | and | 215 | 54. | bird | 3 |
| 27. | animal | 5 | 55. | blood | 1 |
| 28. | another | 4 | 56. | body | 1 |

Appendix Table 5 (Continued)

| Word Families | Occurrences | Word Families | Occurrences |
|---------------|-------------|-----------------|-------------|
| 57. both | 7 | 85. complete | 13 |
| 58. boy | 1 | 86. consider | 1 |
| 59. branch | 1 | 87. contain | 6 |
| 60. bring | 1 | 88. content | 1 |
| 61. broad | 1 | 89. continue | 1 |
| 62. build | 2 | 90. control | 5 |
| 63. burn | 2 | 91. cost | 2 |
| 64. but | 11 | 92. cotton | 1 |
| 65. by | 17 | 93. could | 7 |
| 66. call | 8 | 94. cover | 2 |
| 67. can | 45 | 95. current | 4 |
| 68. car | 5 | 96. cut | 9 |
| 69. care | 2 | 97. danger | 2 |
| 70. carry | 2 | 98. day | 7 |
| 71. cause | 28 | 99. dead | 7 |
| 72. certain | 1 | 100. deal | 2 |
| 73. change | 5 | 101. deep | 1 |
| 74. character | 4 | 102. degree | 9 |
| 75. charge | 2 | 103. depend | 4 |
| 76. class | 62 | 104. describe | 9 |
| 77. clear | 2 | 105. determine | 2 |
| 78. close | 5 | 106. difference | 32 |
| 79. coin | 3 | 107. difficult | 3 |
| 80. cold | 2 | 108. direct | 2 |
| 81. color | 3 | 109. discover | 2 |
| 82. come | 2 | 110. distance | 1 |
| 83. common | 4 | 111. divide | 13 |
| 84. company | 2 | 112. do | 78 |

Appendix Table 5 (Continued)

| Word Families | Occurrences | Word Families | Occurrences |
|----------------|-------------|-----------------|-------------|
| 113. down | 6 | 141. experience | 1 |
| 114. draw | 3 | 142. express | 5 |
| 115. drink | 2 | 143. face | 1 |
| 116. dry | 6 | 144. fact | 1 |
| 117. due | 1 | 145. factory | 1 |
| 118. each | 6 | 146. fail | 1 |
| 119. early | 1 | 147. fall | 2 |
| 120. earth | 30 | 148. far | 13 |
| 121. easy | 5 | 149. farm | 1 |
| 122. eat | 1 | 150. fast | 8 |
| 123. effect | 29 | 151. feeds | 1 |
| 124. efficient | 8 | 152. few | 2 |
| 125. either | 1 | 153. field | 1 |
| 126. else | 1 | 154. figure | 1 |
| 127. end | 1 | 155. fill | 2 |
| 128. English | 20 | 156. find | 9 |
| 129. enough | 3 | 157. fine | 2 |
| 130. enter | 1 | 158. finish | 4 |
| 131. equal | 1 | 159. fire | 3 |
| 132. escape | 3 | 160. first | 14 |
| 133. even | 4 | 161. fish | 3 |
| 134. event | 3 | 162. fit | 1 |
| 135. ever | 1 | 163. five | 5 |
| 136. example | 44 | 164. fix | 1 |
| 137. except | 1 | 165. flow | 3 |
| 138. exercise | 29 | 166. follow | 21 |
| 139. exist | 1 | 167. food | 6 |
| 140. expect | 1 | 168. for | 57 |

Appendix Table 5 (Continued)

| Word Families | Occurrences | Word Families | Occurrences |
|---------------|-------------|----------------|-------------|
| 169. force | 3 | 197. have | 41 |
| 170. forest | 2 | 198. head | 1 |
| 171. forget | 1 | 199. hear | 4 |
| 172. form | 15 | 200. heat | 15 |
| 173. four | 1 | 201. heavy | 7 |
| 174. free | 2 | 202. high | 15 |
| 175. friend | 6 | 203. hold | 4 |
| 176. from | 32 | 204. hot | 14 |
| 177. front | 3 | 205. hour | 1 |
| 178. gas | 10 | 206. house | 2 |
| 179. general | 8 | 207. how | 50 |
| 180. gentle | 2 | 208. however | 4 |
| 181. get | 7 | 209. human | 11 |
| 182. give | 8 | 210. I | 21 |
| 183. glass | 7 | 211. idea | 1 |
| 184. go | 4 | 212. if | 8 |
| 185. god | 1 | 213. important | 3 |
| 186. good | 5 | 214. in | 107 |
| 187. great | 5 | 215. inch | 2 |
| 188. green | 1 | 216. include | 6 |
| 189. ground | 1 | 217. increase | 2 |
| 190. group | 26 | 218. industry | 3 |
| 191. grow | 5 | 219. interest | 6 |
| 192. h | 2 | 220. into | 45 |
| 193. half | 1 | 221. introduce | 1 |
| 194. hand | 2 | 222. iron | 11 |
| 195. happen | 11 | 223. it | 73 |
| 196. hard | 7 | 224. just | 1 |

Appendix Table 5 (Continued)

| Word Families | Occurrences | Word Families | Occurrences |
|---------------|-------------|---------------|-------------|
| 225. keep | 3 | 253. low | 5 |
| 226. kind | 2 | 254. machine | 8 |
| 227. know | 7 | 255. main | 3 |
| 228. lack | 1 | 256. make | 43 |
| 229. land | 1 | 257. man | 1 |
| 230. language | 2 | 258. many | 13 |
| 231. large | 6 | 259. mark | 7 |
| 232. last | 4 | 260. mass | 1 |
| 233. late | 2 | 261. master | 1 |
| 234. lead | 7 | 262. material | 8 |
| 235. learn | 2 | 263. matter | 1 |
| 236. leave | 1 | 264. may | 8 |
| 237. left | 1 | 265. mean | 17 |
| 238. length | 2 | 266. measure | 9 |
| 239. less | 15 | 267. member | 1 |
| 240. let | 1 | 268. mention | 2 |
| 241. life | 5 | 269. metal | 13 |
| 242. lift | 4 | 270. milk | 3 |
| 243. light | 4 | 271. million | 1 |
| 244. like | 13 | 272. miss | 3 |
| 245. line | 33 | 273. modern | 3 |
| 246. listen | 8 | 274. moon | 3 |
| 247. little | 4 | 275. more | 33 |
| 248. live | 6 | 276. most | 17 |
| 249. long | 5 | 277. motor | 1 |
| 250. look | 7 | 278. mountain | 1 |
| 251. loss | 1 | 279. move | 12 |
| 252. love | 1 | 280. much | 17 |

Appendix Table 5 (Continued)

| Word Families | Occurrences | Word Families | Occurrences |
|----------------|-------------|-----------------|-------------|
| 281. must | 3 | 309. one | 19 |
| 282. name | 1 | 310. only | 1 |
| 283. native | 1 | 311. open | 2 |
| 284. nature | 5 | 312. operate | 9 |
| 285. near | 10 | 313. or | 55 |
| 286. need | 4 | 314. order | 4 |
| 287. neighbor | 2 | 315. organize | 1 |
| 288. neither | 2 | 316. other | 8 |
| 289. new | 5 | 317. out | 6 |
| 290. newspaper | 3 | 318. over | 2 |
| 291. next | 9 | 319. owe | 2 |
| 292. no | 4 | 320. own | 1 |
| 293. nor | 2 | 321. paper | 39 |
| 294. not | 27 | 322. part | 10 |
| 295. note | 2 | 323. particular | 2 |
| 296. notice | 1 | 324. pass | 3 |
| 297. now | 2 | 325. past | 6 |
| 298. number | 311 | 326. pay | 2 |
| 299. object | 19 | 327. people | 2 |
| 300. of | 183 | 328. per | 3 |
| 301. off | 1 | 329. perhaps | 1 |
| 302. office | 1 | 330. permit | 1 |
| 303. often | 4 | 331. person | 2 |
| 304. oh | 1 | 332. picture | 9 |
| 305. oil | 1 | 333. piece | 3 |
| 306. old | 5 | 334. place | 8 |
| 307. on | 24 | 335. plant | 16 |
| 308. once | 2 | 336. point | 9 |

Appendix Table 5 (Continued)

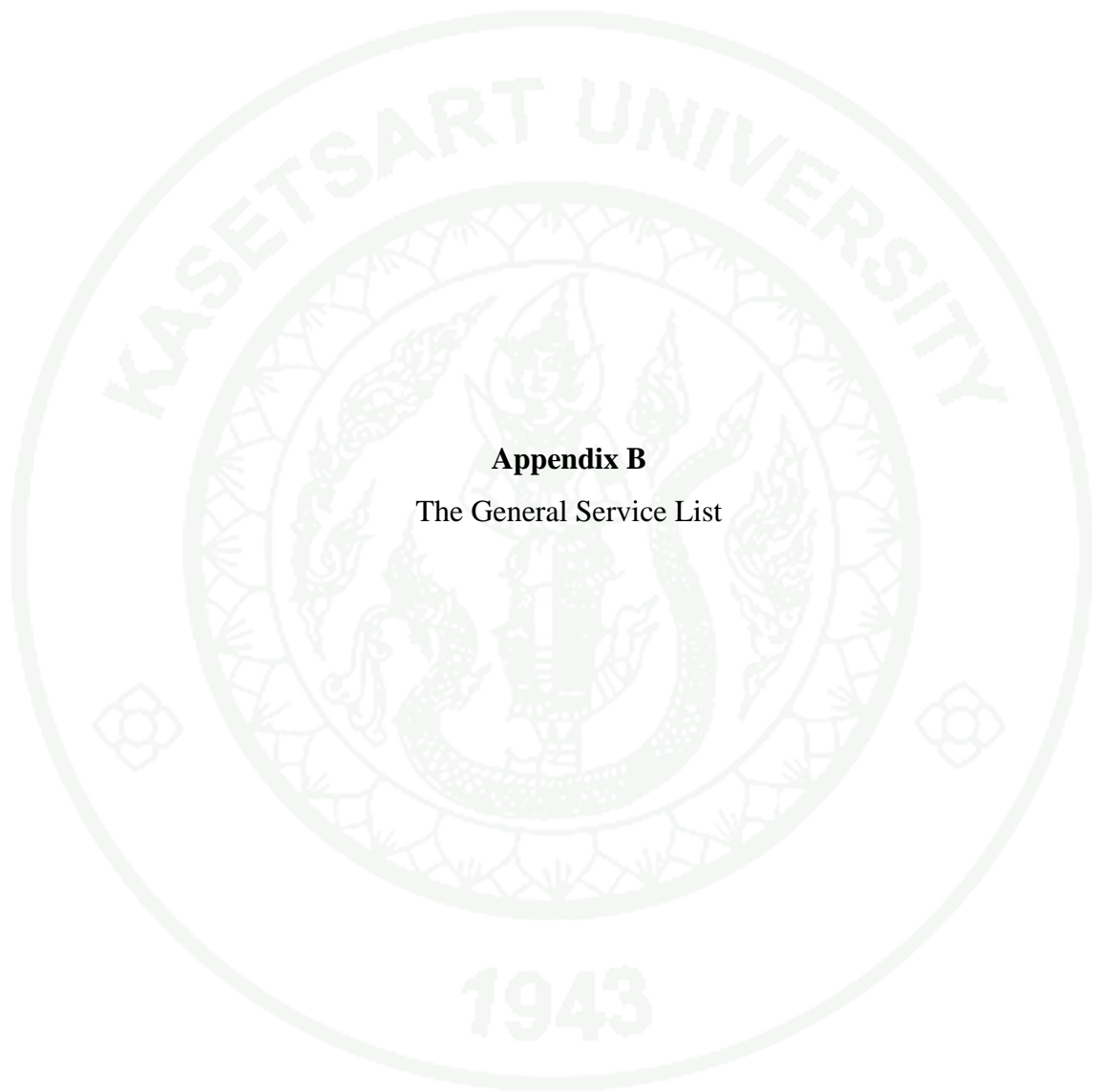
| Word Families | Occurrences | Word Families | Occurrences |
|-----------------|-------------|---------------|-------------|
| 337. popular | 1 | 365. remember | 1 |
| 338. population | 1 | 366. rest | 1 |
| 339. position | 4 | 367. result | 4 |
| 340. possible | 1 | 368. return | 1 |
| 341. power | 16 | 369. ring | 1 |
| 342. prepare | 2 | 370. rise | 1 |
| 343. present | 5 | 371. river | 1 |
| 344. press | 3 | 372. road | 1 |
| 345. pressure | 9 | 373. roll | 9 |
| 346. price | 1 | 374. round | 2 |
| 347. problem | 4 | 375. rule | 1 |
| 348. produce | 3 | 376. run | 4 |
| 349. product | 3 | 377. safe | 1 |
| 350. proper | 2 | 378. salt | 1 |
| 351. property | 5 | 379. same | 9 |
| 352. provide | 1 | 380. say | 1 |
| 353. pull | 3 | 381. science | 2 |
| 354. purpose | 2 | 382. sea | 1 |
| 355. put | 7 | 383. second | 5 |
| 356. quality | 1 | 384. see | 6 |
| 357. question | 14 | 385. sense | 4 |
| 358. quite | 1 | 386. several | 3 |
| 359. reach | 1 | 387. shape | 2 |
| 360. read | 3 | 388. short | 6 |
| 361. ready | 2 | 389. should | 3 |
| 362. reason | 3 | 390. show | 4 |
| 363. relation | 2 | 391. side | 5 |
| 364. remain | 7 | 392. sight | 3 |

Appendix Table 5 (Continued)

| Word Families | Occurrences | Word Families | Occurrences |
|----------------|-------------|----------------|-------------|
| 393. silver | 1 | 421. sun | 18 |
| 394. simple | 3 | 422. support | 3 |
| 395. since | 5 | 423. sure | 3 |
| 396. sit | 1 | 424. surface | 8 |
| 397. size | 5 | 425. system | 9 |
| 398. sky | 1 | 426. table | 7 |
| 399. small | 17 | 427. take | 4 |
| 400. so | 3 | 428. tell | 2 |
| 401. some | 18 | 429. ten | 1 |
| 402. sort | 1 | 430. term | 13 |
| 403. space | 4 | 431. than | 47 |
| 404. speed | 3 | 432. the | 542 |
| 405. spite | 1 | 433. then | 17 |
| 406. stage | 6 | 434. there | 9 |
| 407. standard | 3 | 437. therefore | 2 |
| 408. start | 2 | 436. they | 55 |
| 409. state | 8 | 437. thing | 22 |
| 410. stay | 1 | 438. think | 1 |
| 411. steel | 3 | 439. this | |
| 412. step | 15 | 440. though | |
| 413. still | 4 | 441. three | |
| 414. store | 3 | 442. through | |
| 415. strength | 6 | 443. thus | |
| 416. strong | 3 | 444. time | |
| 417. study | 1 | 445. to | |
| 418. subject | 3 | 446. together | |
| 419. substance | 1 | 447. ton | |
| 420. such | 10 | 448. too | |

Appendix Table 5 (Continued)

| Word Families | Occurrences | Word Families | Occurrences |
|---------------|-------------|---------------|-------------|
| 449. top | 1 | 477. which | 24 |
| 450. touch | 1 | 478. while | 4 |
| 451. train | 1 | 479. who | 4 |
| 452. travel | 2 | 480. why | 17 |
| 453. tree | 9 | 481. wide | 1 |
| 454. trust | 2 | 482. will | 7 |
| 455. turn | 12 | 483. window | 1 |
| 456. twelve | 1 | 484. winter | 2 |
| 457. twenty | 1 | 485. with | 31 |
| 458. two | 19 | 486. without | 7 |
| 459. type | 16 | 487. wood | 4 |
| 460. under | 2 | 488. word | 17 |
| 461. unite | 33 | 498. work | 22 |
| 462. until | 1 | 490. world | 7 |
| 463. up | 11 | 491. would | 5 |
| 464. use | 56 | 492. wound | 2 |
| 465. usual | 6 | 493. write | 10 |
| 466. value | 1 | 494. year | 6 |
| 467. various | 1 | 495. yes | 4 |
| 468. very | 9 | 496. yet | 1 |
| 469. vessel | 1 | 497. you | 29 |
| 470. visit | 1 | 498. which | 24 |
| 471. wait | 1 | 499. while | 4 |
| 472. want | 2 | 500. who | 4 |
| 473. watch | 3 | 501. why | 17 |
| 474. water | 9 | 502. wide | 1 |
| 475. way | 4 | 503. will | 7 |
| 476. we | 47 | | |



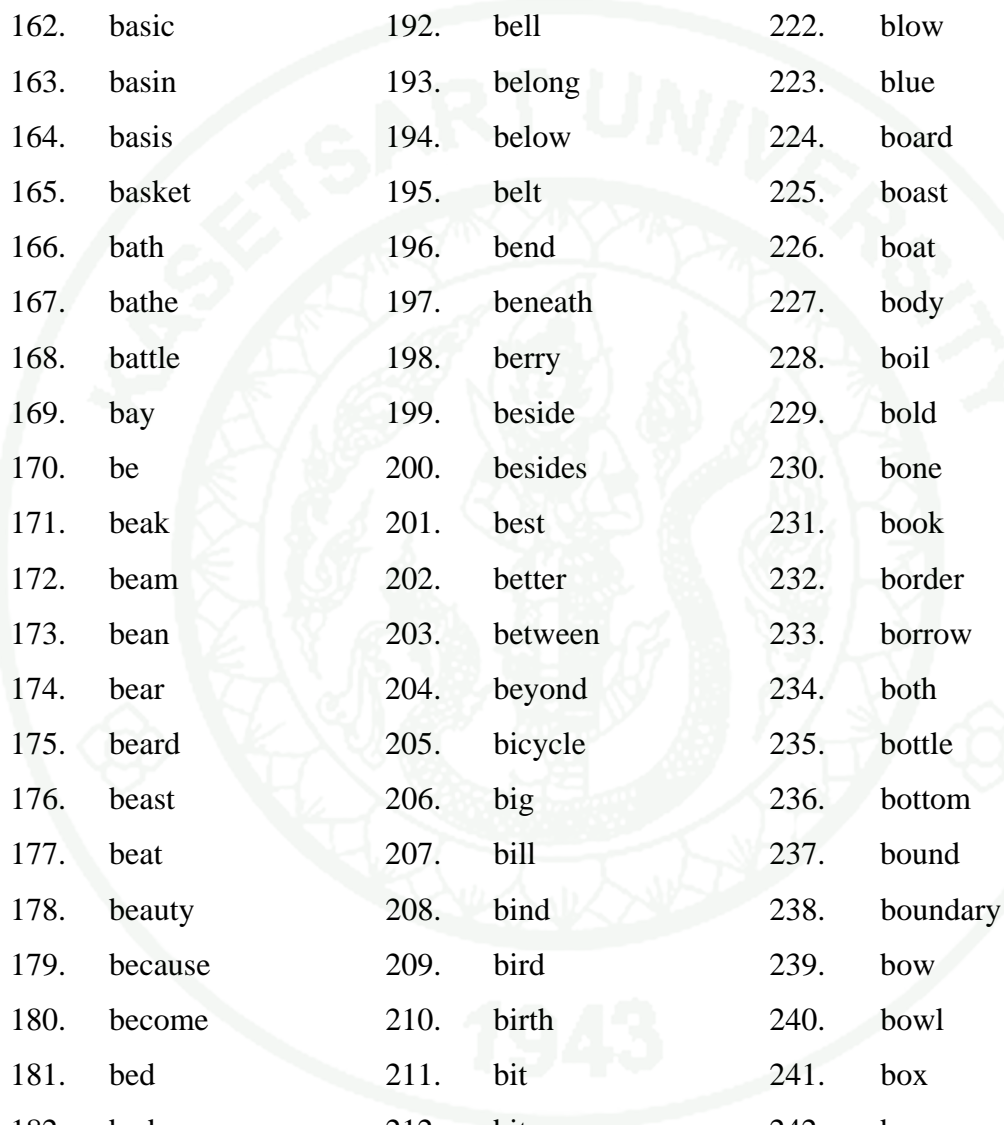
Appendix B
The General Service List

The General Service List
(Bauman and Culligan, 1995)

This version of the General Service List is the list of 2,284 words created by John Bauman and Brent Culligan in 1995. This list includes all the 2,000 capitalized headwords from the original General Service List of West (1953), plus 284 more, ranked and presented in frequency order based on the Brown Corpus (Fráncis and Kucera, 1982)

| | | |
|--------------|---------------|-----------------|
| 1. a | 23. actual | 45. agency |
| 2. ability | 24. add | 46. agent |
| 3. able | 25. address | 47. ago |
| 4. about | 26. admire | 48. agree |
| 5. above | 27. admission | 49. agriculture |
| 6. abroad | 28. admit | 50. ahead |
| 7. absence | 29. adopt | 51. aim |
| 8. absent | 30. adoption | 52. air |
| 9. absolute | 31. advance | 53. airplane |
| 10. accept | 32. advantage | 54. alike |
| 11. accident | 33. adventure | 55. alive |
| 12. accord | 34. advertise | 56. all |
| 13. account | 35. advice | 57. allow |
| 14. accuse | 36. advise | 58. allowance |
| 15. accustom | 37. affair | 59. almost |
| 16. ache | 38. afford | 60. alone |
| 17. across | 39. afraid | 61. along |
| 18. act | 40. after | 62. aloud |
| 19. action | 41. afternoon | 63. already |
| 20. active | 42. again | 64. also |
| 21. actor | 43. against | 65. although |
| 22. actress | 44. age | 66. altogether |

| | | |
|----------------|------------------|-----------------|
| 67. always | 97. applaud | 127. attempt |
| 68. ambition | 98. applause | 128. attend |
| 69. ambitious | 99. apple | 129. attention |
| 70. among | 100. application | 130. attentive |
| 71. amongst | 101. apply | 131. attract |
| 72. amount | 102. appoint | 132. attraction |
| 73. amuse | 103. approve | 133. attractive |
| 74. ancient | 104. arch | 134. audience |
| 75. and | 105. argue | 135. aunt |
| 76. anger | 106. arise | 136. autumn |
| 77. angle | 107. arm | 137. avenue |
| 78. angry | 108. army | 138. average |
| 79. animal | 109. around | 139. avoid |
| 80. annoy | 110. arrange | 140. avoidance |
| 81. annoyance | 111. arrest | 141. awake |
| 82. another | 112. arrive | 142. away |
| 83. answer | 113. arrow | 143. awkward |
| 84. anxiety | 114. art | 144. axe |
| 85. anxious | 115. article | 145. baby |
| 86. any | 116. artificial | 146. back |
| 87. anybody | 117. as | 147. backward |
| 88. anyhow | 118. ash | 148. bad |
| 89. anyone | 119. ashamed | 149. bag |
| 90. anything | 120. aside | 150. baggage |
| 91. anyway | 121. ask | 151. bake |
| 92. anywhere | 122. asleep | 152. balance |
| 93. apart | 123. association | 153. ball |
| 94. apology | 124. astonish | 154. band |
| 95. appear | 125. at | 155. bank |
| 96. appearance | 126. attack | 156. bar |



| | | |
|--------------|---------------|---------------|
| 157. barber | 187. behavior | 217. bleed |
| 158. bare | 188. behind | 218. bless |
| 159. bargain | 189. being | 219. blind |
| 160. barrel | 190. belief | 220. block |
| 161. base | 191. believe | 221. blood |
| 162. basic | 192. bell | 222. blow |
| 163. basin | 193. belong | 223. blue |
| 164. basis | 194. below | 224. board |
| 165. basket | 195. belt | 225. boast |
| 166. bath | 196. bend | 226. boat |
| 167. bathe | 197. beneath | 227. body |
| 168. battle | 198. berry | 228. boil |
| 169. bay | 199. beside | 229. bold |
| 170. be | 200. besides | 230. bone |
| 171. beak | 201. best | 231. book |
| 172. beam | 202. better | 232. border |
| 173. bean | 203. between | 233. borrow |
| 174. bear | 204. beyond | 234. both |
| 175. beard | 205. bicycle | 235. bottle |
| 176. beast | 206. big | 236. bottom |
| 177. beat | 207. bill | 237. bound |
| 178. beauty | 208. bind | 238. boundary |
| 179. because | 209. bird | 239. bow |
| 180. become | 210. birth | 240. bowl |
| 181. bed | 211. bit | 241. box |
| 182. bedroom | 212. bite | 242. boy |
| 183. before | 213. bitter | 243. brain |
| 184. beg | 214. black | 244. branch |
| 185. begin | 215. blade | 245. brass |
| 186. behave | 216. blame | 246. brave |

| | | |
|-------------------|------------------|----------------|
| 247. bravery | 277. businessman | 307. cat |
| 248. bread | 278. busy | 308. catch |
| 249. breadth | 279. but | 309. cattle |
| 250. break | 280. butter | 310. cause |
| 251. breakfast | 281. button | 311. caution |
| 252. breath | 282. buy | 312. cautious |
| 253. breathe | 283. by | 313. cave |
| 254. bribe | 284. cage | 314. cent |
| 255. bribery | 285. cake | 315. center |
| 256. brick | 286. calculate | 316. century |
| 257. bridge | 287. calculation | 317. ceremony |
| 258. bright | 288. calculator | 318. certain |
| 259. brighten | 289. call | 319. certainty |
| 260. bring | 290. calm | 320. chain |
| 261. broad | 291. camera | 321. chair |
| 262. broadcast | 292. camp | 322. chairman |
| 263. brother | 293. can | 323. chalk |
| 264. brown | 294. canal | 324. chance |
| 265. brush | 295. cap | 325. change |
| 266. bucket | 296. cape | 326. character |
| 267. build | 297. capital | 327. charge |
| 268. bunch | 298. captain | 328. charm |
| 269. bundle | 299. car | 329. cheap |
| 270. burn | 300. card | 330. cheat |
| 271. burst | 301. care | 331. check |
| 272. bury | 302. carriage | 332. cheer |
| 273. bus | 303. carry | 333. cheese |
| 274. bush | 304. cart | 334. chest |
| 275. business | 305. case | 335. chicken |
| 276. businesslike | 306. castle | 336. chief |

| | | |
|---------------------|--------------------|---------------------|
| 337. child | 367. coarse | 397. complain |
| 338. childhood | 368. coast | 398. complaint |
| 339. chimney | 369. coat | 399. complete |
| 340. choice | 370. coffee | 400. completion |
| 341. choose | 371. coin | 401. complicate |
| 342. Christmas | 372. cold | 402. complication |
| 343. church | 373. collar | 403. compose |
| 344. circle | 374. collect | 404. composition |
| 345. circular | 375. collection | 405. concern |
| 346. citizen | 376. collector | 406. condition |
| 347. city | 377. college | 407. confess |
| 348. civilize | 378. colony | 408. confession |
| 349. claim | 379. color | 409. confidence |
| 350. class | 380. comb | 410. confident |
| 351. classification | 381. combine | 411. confidential |
| 352. classify | 382. come | 412. confuse |
| 353. clay | 383. comfort | 413. confusion |
| 354. clean | 384. command | 414. congratulate |
| 355. clear | 385. commerce | 415. congratulation |
| 356. clerk | 386. commercial | 416. connect |
| 357. clever | 387. committee | 417. connection |
| 358. cliff | 388. common | 418. conquer |
| 359. climb | 389. companion | 419. conqueror |
| 360. clock | 390. companionship | 420. conquest |
| 361. close | 391. company | 421. conscience |
| 362. cloth | 392. compare | 422. conscious |
| 363. clothe | 393. comparison | 423. consider |
| 364. cloud | 394. compete | 424. contain |
| 365. club | 395. competition | 425. content |
| 366. coal | 396. competitor | 426. continue |

| | | |
|-------------------|------------------|---------------|
| 427. control | 457. crash | 487. cut |
| 428. convenience | 458. cream | 488. daily |
| 429. convenient | 459. creature | 498. damage |
| 430. conversation | 460. creep | 490. damp |
| 431. cook | 461. crime | 491. dance |
| 432. cool | 462. criminal | 492. danger |
| 433. copper | 463. critic | 493. dare |
| 434. copy | 464. crop | 494. dark |
| 437. cork | 465. cross | 495. darken |
| 436. corn | 466. crowd | 496. date |
| 437. corner | 467. crown | 497. daughter |
| 438. correct | 468. cruel | 498. day |
| 439. correction | 469. crush | 499. daylight |
| 440. cost | 470. cry | 500. dead |
| 441. cottage | 471. cultivate | 501. deaf |
| 442. cotton | 472. cultivation | 502. deafen |
| 443. cough | 473. cultivator | 503. deal |
| 444. could | 474. cup | 504. dear |
| 445. council | 475. cupboard | 505. death |
| 446. count | 476. cure | 506. debt |
| 447. country | 477. curious | 507. decay |
| 448. courage | 478. curl | 508. deceit |
| 449. course | 479. current | 509. deceive |
| 450. court | 480. curse | 510. decide |
| 451. cousin | 481. curtain | 511. decision |
| 452. cover | 482. curve | 512. decisive |
| 453. cow | 483. cushion | 513. declare |
| 454. coward | 484. custom | 514. decrease |
| 455. cowardice | 485. customary | 515. deed |
| 456. crack | 486. customer | 516. deep |

| | | |
|------------------|--------------------|----------------------|
| 517. deepen | 547. destructive | 577. discuss |
| 518. deer | 548. detail | 578. discussion |
| 519. defeat | 549. determine | 579. disease |
| 520. defend | 550. develop | 580. disgust |
| 521. defendant | 551. devil | 581. dish |
| 522. defense | 552. diamond | 582. dismiss |
| 523. degree | 553. dictionary | 583. disregard |
| 524. delay | 554. die | 584. disrespect |
| 525. delicate | 555. difference | 585. dissatisfaction |
| 526. delight | 556. different | 586. dissatisfy |
| 527. deliver | 557. difficult | 587. distance |
| 528. delivery | 558. difficulty | 588. distant |
| 529. demand | 559. dig | 589. distinguish |
| 530. department | 560. dine | 590. district |
| 531. depend | 561. dinner | 591. disturb |
| 532. dependence | 562. dip | 592. ditch |
| 533. dependent | 563. direct | 593. dive |
| 534. depth | 564. direction | 594. divide |
| 535. descend | 565. director | 595. division |
| 536. descendant | 566. dirt | 596. do |
| 537. descent | 567. disagree | 597. doctor |
| 538. describe | 568. disappear | 598. dog |
| 539. description | 569. disappearance | 599. dollar |
| 540. desert | 570. disappoint | 600. donkey |
| 541. deserve | 571. disapprove | 601. door |
| 542. desire | 572. discipline | 602. dot |
| 543. desk | 573. discomfort | 603. double |
| 544. despair | 574. discontent | 604. doubt |
| 545. destroy | 575. discover | 605. down |
| 546. destruction | 576. discovery | 606. dozen |

| | | |
|--------------|------------------|------------------|
| 607. drag | 637. educate | 667. English |
| 608. draw | 638. education | 668. enjoy |
| 609. drawer | 639. educator | 669. enough |
| 610. dream | 640. effect | 670. enter |
| 611. dress | 641. effective | 671. entertain |
| 612. drink | 642. efficiency | 672. entire |
| 613. drive | 643. efficient | 673. entrance |
| 614. drop | 644. effort | 674. envelope |
| 615. drown | 645. egg | 675. envy |
| 616. drum | 646. either | 676. equal |
| 617. dry | 647. elastic | 677. escape |
| 618. duck | 648. elder | 678. especially |
| 619. due | 649. elect | 679. essence |
| 620. dull | 650. election | 680. essential |
| 621. during | 651. electric | 681. even |
| 622. dust | 652. electrician | 682. evening |
| 623. duty | 653. elephant | 683. event |
| 624. each | 654. else | 684. ever |
| 625. eager | 655. elsewhere | 686. everlasting |
| 626. ear | 656. empire | 686. every |
| 627. early | 657. employ | 687. everybody |
| 628. earn | 658. employee | 688. everyday |
| 629. earnest | 659. empty | 689. everyone |
| 630. earth | 660. enclose | 690. everything |
| 631. ease | 661. enclosure | 691. everywhere |
| 632. east | 662. encourage | 692. evil |
| 633. eastern | 663. end | 693. exact |
| 634. easy | 664. enemy | 694. examine |
| 635. eat | 665. engine | 695. example |
| 636. edge | 666. engineer | 696. excellence |

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| 697. excellent | 727. eye | 757. fear |
| 698. except | 728. face | 758. feast |
| 699. exception | 729. fact | 759. feather |
| 700. excess | 730. factory | 760. feed |
| 701. excessive | 731. fade | 761. feel |
| 702. exchange | 732. fail | 762. fellow |
| 703. excite | 733. failure | 763. fellowship |
| 704. excuse | 734. faint | 764. female |
| 705. exercise | 735. fair | 765. fence |
| 706. exist | 736. faith | 766. fever |
| 707. existence | 737. fall | 767. few |
| 708. expect | 738. false | 768. field |
| 709. expense | 739. fame | 769. fierce |
| 710. expensive | 740. familiar | 770. fight |
| 711. experience | 741. family | 771. figure |
| 712. experiment | 742. fan | 772. fill |
| 713. explain | 743. fancy | 773. film |
| 714. explode | 744. far | 774. find |
| 715. explore | 745. farm | 775. fine |
| 716. explosion | 746. fashion | 776. finger |
| 717. explosive | 747. fashioned | 777. finish |
| 718. express | 748. fast | 778. fire |
| 719. expression | 749. fasten | 779. firm |
| 720. extend | 750. fat | 780. first |
| 721. extension | 751. fate | 781. fish |
| 722. extensive | 752. father | 782. fit |
| 723. extent | 753. fatten | 783. fix |
| 724. extra | 754. fault | 784. flag |
| 725. extraordinary | 755. favor | 785. flame |
| 726. extreme | 756. favorite | 786. flash |

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| 787. flat | 817. fortune | 847. gallon |
| 788. flatten | 818. forward | 848. game |
| 789. flavor | 819. frame | 849. gap |
| 790. flesh | 820. framework | 850. garage |
| 791. float | 821. free | 851. garden |
| 792. flood | 822. freedom | 882. gas |
| 793. floor | 823. freeze | 853. gate |
| 794. flour | 824. frequency | 854. gather |
| 795. flow | 825. frequent | 855. gay |
| 796. flower | 826. fresh | 856. general |
| 797. fly | 827. friend | 857. generous |
| 798. fold | 828. friendly | 858. gentle |
| 799. follow | 829. friendship | 859. gentleman |
| 800. fond | 830. fright | 860. get |
| 801. food | 831. frighten | 861. gift |
| 802. fool | 832. from | 862. girl |
| 803. foot | 833. front | 863. give |
| 804. for | 834. fruit | 864. glad |
| 805. forbid | 835. fry | 865. glass |
| 806. force | 836. full | 866. glory |
| 807. foreign | 837. fun | 867. go |
| 808. forest | 838. funeral | 868. goat |
| 809. forget | 839. funny | 869. god |
| 810. forgive | 840. fur | 870. gold |
| 811. fork | 841. furnish | 871. golden |
| 812. form | 842. furniture | 872. good |
| 813. formal | 843. further | 873. govern |
| 814. former | 844. future | 874. governor |
| 815. forth | 845. gaiety | 875. grace |
| 816. fortunate | 846. gain | 876. gradual |

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| 877. | grain | 907. | hand | 937. | heat |
| 878. | grammar | 908. | handkerchief | 938. | heaven |
| 879. | grammatical | 909. | handle | 939. | heavenly |
| 880. | grand | 910. | handshake | 940. | heavy |
| 881. | grass | 911. | handwriting | 941. | height |
| 882. | grateful | 912. | hang | 942. | heighten |
| 883. | grave | 913. | happen | 943. | hello |
| 884. | gray | 914. | happy | 944. | help |
| 885. | grease | 915. | harbor | 945. | here |
| 886. | great | 916. | hard | 946. | hesitate |
| 887. | greed | 917. | harden | 947. | hesitation |
| 888. | green | 918. | hardly | 948. | hide |
| 889. | greet | 919. | harm | 949. | high |
| 890. | grind | 920. | harvest | 950. | highway |
| 891. | ground | 921. | haste | 951. | hill |
| 892. | group | 922. | hasten | 952. | hinder |
| 893. | grow | 923. | hat | 953. | hindrance |
| 894. | growth | 924. | hate | 954. | hire |
| 895. | gsl | 925. | hatred | 955. | history |
| 896. | guard | 926. | have | 956. | hit |
| 897. | guess | 927. | hay | 957. | hold |
| 898. | guest | 928. | he | 958. | hole |
| 899. | guide | 929. | head | 959. | holiday |
| 900. | guilt | 930. | headache | 960. | hollow |
| 901. | gun | 931. | headdress | 961. | holy |
| 902. | habit | 932. | heal | 962. | home |
| 903. | hair | 933. | health | 963. | homecoming |
| 904. | half | 934. | heap | 964. | homemade |
| 905. | hall | 935. | hear | 965. | homework |
| 906. | hammer | 936. | heart | 966. | honest |

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| 967. honesty | 997. ill | 1027. instead |
| 968. honor | 998. imaginary | 1028. instrument |
| 969. hook | 999. imaginative | 1029. insult |
| 970. hope | 1000. imagine | 1030. insurance |
| 971. horizon | 1001. imitate | 1031. insure |
| 972. horizontal | 1002. imitation | 1032. intend |
| 973. horse | 1003. immediate | 1033. intention |
| 974. hospital | 1004. immense | 1034. interest |
| 975. host | 1005. importance | 1035. interfere |
| 976. hot | 1006. important | 1036. interference |
| 977. hotel | 1007. impossible | 1037. international |
| 978. hour | 1008. improve | 1038. interrupt |
| 979. house | 1009. in | 1039. interruption |
| 980. how | 1010. inch | 1040. into |
| 981. however | 1011. include | 1041. introduce |
| 982. human | 1012. inclusive | 1042. introduction |
| 983. humble | 1013. increase | 1043. invent |
| 984. hunger | 1014. indeed | 1044. invention |
| 985. hunt | 1015. indoor | 1045. inventor |
| 986. hurrah | 1016. industry | 1046. invite |
| 987. hurry | 1017. influence | 1047. inward |
| 988. hurt | 1018. influential | 1048. iron |
| 989. husband | 1019. inform | 1049. island |
| 990. hut | 1020. ink | 1050. it |
| 991. I | 1021. inn | 1051. jaw |
| 992. ice | 1022. inquire | 1052. jealous |
| 993. idea | 1023. inquiry | 1053. jealousy |
| 994. ideal | 1024. insect | 1054. jewel |
| 995. idle | 1025. inside | 1055. join |
| 996. if | 1026. instant | 1056. joint |

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| 1057. joke | 1087. landlord | 1117. letter |
| 1058. journey | 1088. language | 1118. level |
| 1059. joy | 1089. large | 1119. liar |
| 1060. judge | 1090. last | 1120. liberty |
| 1061. juice | 1091. late | 1121. librarian |
| 1062. jump | 1092. lately | 1122. library |
| 1063. just | 1093. latter | 1123. lid |
| 1064. justice | 1094. laugh | 1124. lie |
| 1065. keep | 1095. laughter | 1125. life |
| 1066. key | 1096. law | 1126. lift |
| 1067. kick | 1097. lawyer | 1127. light |
| 1068. kill | 1098. lay | 1128. lighten |
| 1069. kind | 1099. lazy | 1129. like |
| 1070. king | 1100. lead | 1130. likely |
| 1071. kingdom | 1101. leadership | 1131. limb |
| 1072. kiss | 1102. leaf | 1132. limit |
| 1073. kitchen | 1103. lean | 1133. line |
| 1074. knee | 1104. learn | 1134. lip |
| 1075. kneel | 1105. least | 1135. lipstick |
| 1076. knife | 1106. leather | 1136. liquid |
| 1077. knock | 1107. leave | 1137. list |
| 1078. knot | 1108. left | 1138. listen |
| 1079. know | 1109. leg | 1139. literary |
| 1080. knowledge | 1110. lend | 1140. literature |
| 1081. lack | 1111. length | 1141. little |
| 1082. ladder | 1112. lengthen | 1142. live |
| 1083. lady | 1113. less | 1143. load |
| 1084. lake | 1114. lessen | 1144. loaf |
| 1085. lamp | 1115. lesson | 1145. loan |
| 1086. land | 1116. let | 1146. local |

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| 1147. lock | 1177. man | 1207. meet |
| 1148. lodge | 1178. manage | 1208. melt |
| 1149. log | 1179. mankind | 1219. member |
| 1150. lonely | 1180. manner | 1210. membership |
| 1151. long | 1181. manufacture | 1211. memory |
| 1152. look | 1182. many | 1212. mend |
| 1153. loose | 1183. map | 1213. mention |
| 1154. loosen | 1184. march | 1214. merchant |
| 1155. lord | 1185. mark | 1215. mercy |
| 1156. lose | 1186. market | 1216. mere |
| 1157. loss | 1187. marriage | 1217. merry |
| 1158. lot | 1188. marry | 1218. message |
| 1159. loud | 1189. mass | 1219.. messenger |
| 1160. love | 1190. master | 1220. metal |
| 1161. lovely | 1191. mat | 1221. middle |
| 1162. low | 1192. match | 1222. might |
| 1163. loyal | 1193. material | 1223. mild |
| 1164. loyalty | 1194. matter | 1224. mile |
| 1165. luck | 1197. may | 1225. milk |
| 1166. lump | 1196. maybe | 1226. mill |
| 1167. lunch | 1197. meal | 1227. mind |
| 1168. lung | 1198.. mean | 1228. mine |
| 1169. machine | 1199. meantime | 1229. mineral |
| 1170. machinery | 1200. meanwhile | 1230. minister |
| 1171. mad | 1201. measure | 1231. minute |
| 1172. madden | 1202. meat | 1232. miserable |
| 1173. mail | 1203. mechanic | 1233. misery |
| 1174. main | 1204. mechanism | 1234. miss |
| 1175. make | 1205. medical | 1235. mistake |
| 1176. male | 1206. medicine | 1236. mix |

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| 1237. mixture | 1267. multiplication | 1297. news |
| 1238. model | 1268. multiply | 1298. newspaper |
| 1239. moderate | 1269. murder | 1299. next |
| 1240. moderation | 1270. music | 1300. nice |
| 1241. modern | 1271. musician | 1301. niece |
| 1242. modest | 1272. must | 1302. night |
| 1243. modesty | 1273. mystery | 1303. no |
| 1244. moment | 1274. nail | 1304. noble |
| 1245. momentary | 1275. name | 1305. nobody |
| 1246. money | 1276. narrow | 1306. noise |
| 1247. monkey | 1277. nation | 1307. none |
| 1248. month | 1278. native | 1308. noon |
| 1249. moon | 1279. nature | 1309. nor |
| 1250. moonlight | 1280. near | 1310. north |
| 1251. moral | 1281. neat | 1311. northern |
| 1252. more | 1282. necessary | 1312. nose |
| 1253. moreover | 1283. necessity | 1313. not |
| 1254. morning | 1284. neck | 1314. note |
| 1255. most | 1285. need | 1315. notebook |
| 1256. mother | 1286. needle | 1316. nothing |
| 1257. motherhood | 1287. neglect | 1317. notice |
| 1258. motherly | 1288. neighbor | 1318. noun |
| 1259. motion | 1289. neighborhood | 1319. now |
| 1260. motor | 1290. neither | 1320. nowadays |
| 1261. mountain | 1291. nephew | 1321. nowhere |
| 1262. mouse | 1292. nest | 1322. nuisance |
| 1263. mouth | 1293. net | 1323. number |
| 1264. move | 1294. network | 1324. numerous |
| 1265. much | 1295. never | 1325. nurse |
| 1266. mud | 1296. new | 1326. nursery |

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| 1327. nut | 1357. operator | 1387. pad |
| 1328. oar | 1358. opinion | 1388. page |
| 1329. obedience | 1359. opportunity | 1389. pain |
| 1330. obedient | 1360. oppose | 1390. paint |
| 1331. obey | 1361. opposite | 1391. pair |
| 1332. object | 1362. opposition | 1392. pale |
| 1333. objection | 1363. or | 1393. pan |
| 1334. observe | 1364. orange | 1394. paper |
| 1335. occasion | 1365. order | 1395. parcel |
| 1336. ocean | 1366. ordinary | 1396. pardon |
| 1337. of | 1367. organ | 1397. parent |
| 1338. off | 1368. organize | 1398. park |
| 1339. offend | 1369. origin | 1399. part |
| 1340. offense | 1370. ornament | 1400. particle |
| 1341. offer | 1371. other | 1401. particular |
| 1342. office | 1372. otherwise | 1402. partner |
| 1343. officer | 1373. ought | 1403. party |
| 1344. official | 1374. ounce | 1404. pass |
| 1345. often | 1375. out | 1405. passage |
| 1346. oil | 1376. outline | 1406. passenger |
| 1347. omission | 1377. outside | 1407. past |
| 1348. omit | 1378. outward | 1408. paste |
| 1349. on | 1379. over | 1409. pastry |
| 1350. once | 1380. overcome | 1410. path |
| 1351. one | 1381. overflow | 1411. patience |
| 1352. only | 1382. owe | 1412. patient |
| 1353. onto | 1383. own | 1413. patriotic |
| 1354. open | 1384. ownership | 1414. pattern |
| 1355. operate | 1385. pack | 1415. pause |
| 1356. operation | 1386. package | 1416. paw |

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| 1417. pay | 1447. pinch | 1477. poor |
| 1418. peace | 1448. pink | 1478. popular |
| 1419. pearl | 1449. pint | 1479. population |
| 1420. peculiar | 1450. pipe | 1480. position |
| 1421. pen | 1451. pity | 1481. possess |
| 1422. pencil | 1452. place | 1482. possession |
| 1423. penny | 1453. plain | 1483. possessor |
| 1424. people | 1454. plan | 1484. possible |
| 1425. per | 1455. plant | 1485. post |
| 1426. perfect | 1456. plaster | 1486. postpone |
| 1427. perfection | 1457. plate | 1487. pot |
| 1428. perform | 1458. play | 1488. pound |
| 1429. performance | 1459. pleasant | 1489. pour |
| 1430. perhaps | 1460. please | 1490. poverty |
| 1431. permanent | 1461. pleasure | 1491. powder |
| 1432. permission | 1462.. plenty | 1492. power |
| 1433. permit | 1463. plow | 1493. practical |
| 1434. person | 1464. plural | 1494. practice |
| 1435. persuade | 1465. pocket | 1495. praise |
| 1436. persuasion | 1466. poem | 1496. pray |
| 1437. pet | 1467. poet | 1497. preach |
| 1438. photograph | 1468. point | 1498. precious |
| 1439. photography | 1469. poison | 1499. prefer |
| 1440. pick | 1470. police | 1500. preference |
| 1441. picture | 1471. polish | 1501. prejudice |
| 1442. piece | 1472. polite | 1502. prepare |
| 1443. pig | 1473. political | 1503. presence |
| 1444. pigeon | 1474. politician | 1504. present |
| 1445. pile | 1475. politics | 1505. preserve |
| 1446. pin | 1476. pool | 1506. president |

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| 1507. press | 1537. property | 1567. quiet |
| 1508. pressure | 1538. proposal | 1568. quite |
| 1509. pretend | 1539. propose | 1569. rabbit |
| 1510. pretense | 1340. protect | 1570. race |
| 1511. pretty | 1541. protection | 1571. radio |
| 1512. prevent | 1542. proud | 1572. rail |
| 1513. prevention | 1543. prove | 1573. railroad |
| 1514. price | 1544. provide | 1574. rain |
| 1515. pride | 1545. public | 1575. raise |
| 1516. priest | 1546. pull | 1576. rake |
| 1517. print | 1547. pump | 1577. rank |
| 1518. prison | 1548. punctual | 1578. rapid |
| 1519. private | 1549. punish | 1579. rare |
| 1520. prize | 1550. pupil | 1580. rate |
| 1521. probable | 1551. pure | 1580. rather |
| 1522. problem | 1552. purple | 1582. raw |
| 1523. procession | 1553. purpose | 1583. ray |
| 1524. produce | 1554. push | 1584. razor |
| 1525. product | 1555. put | 1585. reach |
| 1526. production | 1556. puzzle | 1586. read |
| 1527. profession | 1557. qualification | 1587. ready |
| 1528. profit | 1558. qualify | 1588. real |
| 1529. program | 1559. quality | 1589. realize |
| 1530. progress | 1560. quantity | 1590. reason |
| 1531. promise | 1561. quarrel | 1591. reasonable |
| 1532. prompt | 1562. quart | 1592. receipt |
| 1533. pronounce | 1563. quarter | 1593. receive |
| 1534. pronunciation | 1564. queen | 1594. recent |
| 1535. proof | 1565. question | 1595. recognition |
| 1536. proper | 1566. quick | 1596. recognize |

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| 1597. recommend | 1627. repetition | 1657. ride |
| 1598. record | 1628. replace | 1658. right |
| 1599. red | 1629. reply | 1659. ring |
| 1600. redden | 1630. report | 1660. ripe |
| 1601. reduce | 1631. represent | 1661. ripen |
| 1602. reduction | 1632. representative | 1662. rise |
| 1603. refer | 1633. reproduce | 1663. risk |
| 1604. reference | 1634. reproduction | 1664. rival |
| 1605. reflect | 1635. republic | 1665. rivalry |
| 1606. reflection | 1636. reputation | 1666. river |
| 1607. refresh | 1637. request | 1667. road |
| 1608. refuse | 1638. rescue | 1668. roar |
| 1609. regard | 1639. reserve | 1669. roast |
| 1610. regret | 1640. resign | 1670. rob |
| 1611. regular | 1641. resist | 1671. robbery |
| 1612. rejoice | 1642. resistance | 1672. rock |
| 1613. relate | 1643. respect | 1673. rod |
| 1614. relation | 1644. responsible | 1674. roll |
| 1615. relative | 1645. rest | 1675. roof |
| 1616. relief | 1646. restaurant | 1676. room |
| 1617. relieve | 1647. result | 1677. root |
| 1618. religion | 1648. retire | 1678. rope |
| 1619. remain | 1649. return | 1679. rot |
| 1620. remark | 1650. revenge | 1680. rotten |
| 1621. remedy | 1651. review | 1681. rough |
| 1622. remember | 1652. reward | 1682. round |
| 1623. remind | 1653. ribbon | 1683. row |
| 1624. rent | 1654. rice | 1684. royal |
| 1625. repair | 1655. rich | 1685. royalty |
| 1626. repeat | 1656. rid | 1686. rub |

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| 1687. rubber | 1717. saucer | 1747. seed |
| 1688. rubbish | 1718. save | 1748. seem |
| 1689. rude | 1719. saw | 1749. seize |
| 1690. rug | 1720. say | 1750. seldom |
| 1691. ruin | 1721. scale | 1751. self |
| 1692. rule | 1722. scarce | 1752. selfish |
| 1693. run | 1723. scatter | 1753. sell |
| 1694. rush | 1724. scene | 1754. send |
| 1695. rust | 1725. scenery | 1755. sense |
| 1696. sacred | 1726. scent | 1756. sensitive |
| 1697. sacrifice | 1727. school | 1757. sentence |
| 1698. sad | 1728. science | 1758. separate |
| 1699. sadden | 1729. scientific | 1759. separation |
| 1700. saddle | 1730. scientist | 1760. serious |
| 1701. safe | 1731. scissors | 1761. servant |
| 1702. safety | 1732. scold | 1762. serve |
| 1703. sail | 1733. scorn | 1763. service |
| 1704. sailor | 1734. scrape | 1764. set |
| 1705. sake | 1735. scratch | 1765. settle |
| 1706. salary | 1736. screen | 1766. several |
| 1707. sale | 1737. screw | 1767. severe |
| 1708. salesman | 1738. sea | 1768. sew |
| 1709. salt | 1739. search | 1769. shade |
| 1710. same | 1740. season | 1770. shadow |
| 1711. sample | 1741. seat | 1771. shake |
| 1712. sand | 1742. second | 1772. shall |
| 1713. satisfaction | 1743. secrecy | 1773. shallow |
| 1714. satisfactory | 1744. secret | 1774. shame |
| 1715. satisfy | 1745. secretary | 1775. shape |
| 1716. sauce | 1746. see | 1776. share |

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| 1777. | sharp | 1807. | sign | 1837. | slope |
| 1778. | sharpen | 1808. | signal | 1838. | slow |
| 1779. | shave | 1809. | signature | 1839. | small |
| 1780. | she | 1810. | silence | 1840. | smell |
| 1781. | sheep | 1811. | silent | 1841. | smile |
| 1782. | sheet | 1812. | silk | 1842. | smoke |
| 1783. | shelf | 1813. | silver | 1843. | smooth |
| 1784. | shell | 1814. | simple | 1844. | snake |
| 1785. | shelter | 1815. | simplicity | 1845. | snow |
| 1786. | shield | 1816. | since | 1846. | so |
| 1787. | shilling | 1817. | sincere | 1847. | soap |
| 1788. | shine | 1818. | sing | 1848. | social |
| 1789. | ship | 1819. | single | 1849. | society |
| 1790. | shirt | 1820. | sink | 1850. | sock |
| 1791. | shock | 1821. | sir | 1851. | soft |
| 1792. | shoe | 1822. | sister | 1852. | soften |
| 1793. | shoot | 1823. | sit | 1853. | soil |
| 1794. | shop | 1824. | situation | 1854. | soldier |
| 1795. | shore | 1825. | size | 1855. | solemn |
| 1796. | short | 1826. | skill | 1856. | solid |
| 1797. | shorten | 1827. | skin | 1857. | solution |
| 1798. | should | 1828. | skirt | 1858. | solve |
| 1799. | shoulder | 1829. | sky | 1859. | some |
| 1800. | shout | 1830. | slave | 1860. | somebody |
| 1801. | show | 1831. | slavery | 1861. | somehow |
| 1802. | shower | 1832. | sleep | 1862. | someone |
| 1803. | shut | 1833. | slide | 1863. | something |
| 1804. | sick | 1834. | slight | 1864. | sometime |
| 1805. | side | 1835. | slip | 1865. | sometimes |
| 1806. | sight | 1836. | slippery | 1866. | somewhere |

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| 1867. son | 1897. spoon | 1927. stir |
| 1868. song | 1898. sport | 1928. stock |
| 1869. soon | 1899. spot | 1929. stocking |
| 1870. sore | 1900. spread | 1930. stomach |
| 1871. sorrow | 1901. spring | 1931. stone |
| 1872. sorry | 1902. square | 1932. stop |
| 1873. sort | 1903. staff | 1933. store |
| 1874. soul | 1904. stage | 1934. storm |
| 1875. sound | 1905. stain | 1935. story |
| 1876. soup | 1906. stair | 1936. stove |
| 1877. sour | 1907. stamp | 1937. straight |
| 1878. south | 1908. stand | 1938. straighten |
| 1879. sow | 1909. standard | 1939. strange |
| 1880. space | 1910. star | 1940. strap |
| 1881. spade | 1911. start | 1941. straw |
| 1882. spare | 1912. state | 1942. stream |
| 1883. speak | 1913. station | 1943. street |
| 1884. special | 1914. stay | 1944. strength |
| 1885. speech | 1915. steady | 1945. strengthen |
| 1886. speed | 1916. steam | 1946. stretch |
| 1887. spell | 1917. steel | 1947. strict |
| 1888. spend | 1918. steep | 1948. strike |
| 1889. spill | 1919. steer | 1949. string |
| 1890. spin | 1920. stem | 1950. strip |
| 1891. spirit | 1921. step | 1951. stripe |
| 1892. spit | 1922. stick | 1952. stroke |
| 1893. spite | 1923. stiff | 1953. strong |
| 1894. splendid | 1924. stiffen | 1954. struggle |
| 1895. split | 1925. still | 1955. student |
| 1896. spoil | 1926. sting | 1956. study |

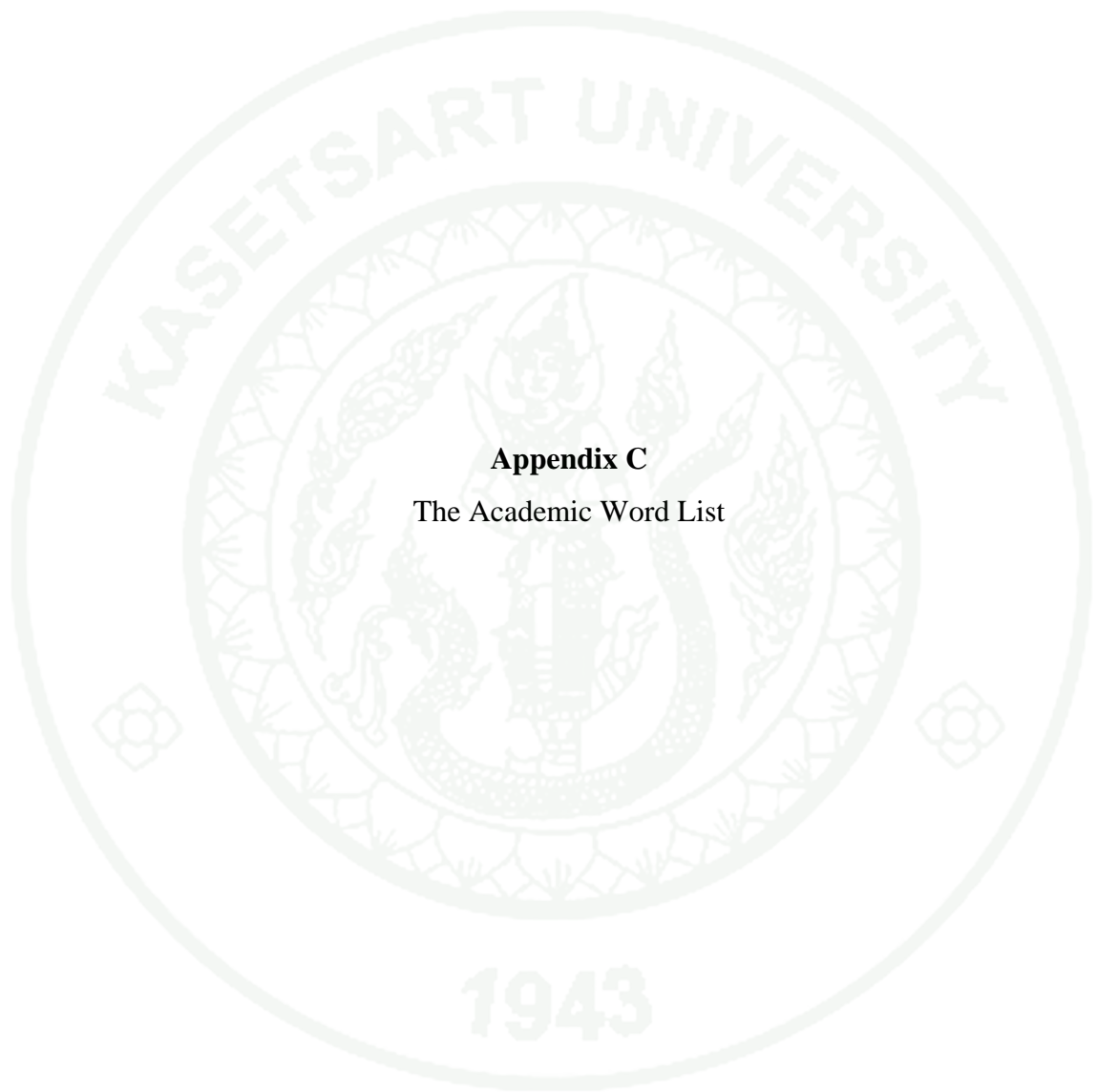
| | | | | | |
|-------|------------|-------|-------------|-------|------------|
| 1957. | stuff | 1987. | sweep | 2017. | tempt |
| 1958. | stupid | 1988. | sweet | 2018. | tend |
| 1959. | subject | 1989. | sweeten | 2019. | tender |
| 1960. | substance | 1990. | swell | 2020. | tent |
| 1961. | succeed | 1991. | swim | 2021. | term |
| 1962. | success | 1992. | swing | 2022. | terrible |
| 1963. | such | 1993. | sword | 2023. | test |
| 1964. | suck | 1994. | sympathetic | 2024. | than |
| 1965. | sudden | 1995. | sympathy | 2025. | thank |
| 1966. | suffer | 1996. | system | 2026. | that |
| 1967. | sugar | 1997. | table | 2027. | the |
| 1968. | suggest | 1998. | tail | 2028. | theater |
| 1969. | suggestion | 1999. | tailor | 2029. | theatrical |
| 1970. | suit | 2000. | take | 2030. | then |
| 1971. | summer | 2001. | talk | 2031. | there |
| 1972. | sun | 2002. | tall | 2032. | therefore |
| 1973. | supper | 2003. | tame | 2033. | these |
| 1974. | supply | 2004. | tap | 2034. | they |
| 1975. | support | 2005. | taste | 2035. | thick |
| 1976. | suppose | 2006. | tax | 2036. | thicken |
| 1977. | sure | 2007. | taxi | 2037. | thief |
| 1978. | surface | 2008. | tea | 2038. | thin |
| 1979. | surprise | 2009. | teach | 2039. | thing |
| 1980. | surround | 2010. | tear | 2040. | think |
| 1981. | suspect | 2011. | telegraph | 2041. | thirst |
| 1982. | suspicion | 2012. | telephone | 2042. | this |
| 1983. | suspicious | 2013. | tell | 2043. | thorn |
| 1984. | swallow | 2014. | temper | 2044. | thorough |
| 1985. | swear | 2015. | temperature | 2045. | those |
| 1986. | sweat | 2016. | temple | 2046. | though |

| | | |
|----------------|-------------------|------------------|
| 2047. thread | 2077. too | 2107. trip |
| 2048. threat | 2078. tool | 2108. trouble |
| 2049. threaten | 2079. tooth | 2109. true |
| 2050. throat | 2080. top | 2110. trunk |
| 2051. through | 2081. total | 2111. trust |
| 2052. throw | 2082. touch | 2112. truth |
| 2053. thumb | 2083. tough | 2113. try |
| 2054. thunder | 2084. tour | 2114. tube |
| 2055. thus | 2085. toward | 2115. tune |
| 2056. ticket | 2086. towel | 2116. turn |
| 2057. tide | 2087. tower | 2117. twist |
| 2058. tidy | 2088. town | 2118. type |
| 2059. tie | 2089. toy | 2119. ugly |
| 2060. tight | 2090. track | 2120. umbrella |
| 2061. tighten | 2091. trade | 2121. uncle |
| 2062. till | 2092. train | 2122. under |
| 2063. time | 2093. translate | 2123. underneath |
| 2064. tin | 2094. translation | 2124. understand |
| 2065. tip | 2095. translator | 2125. union |
| 2066. tire | 2096. trap | 2126. unit |
| 2067. title | 2097. travel | 2127. unite |
| 2068. to | 2098. tray | 2128. unity |
| 2069. tobacco | 2099. treasure | 2129. universal |
| 2070. today | 2100. treasury | 2130. universe |
| 2071. toe | 2101. treat | 2131. university |
| 2072. together | 2102. tree | 2132. unless |
| 2073. tomorrow | 2103. tremble | 2133. until |
| 2074. ton | 2104. trial | 2134. up |
| 2075. tongue | 2105. tribe | 2135. upon |
| 2076. tonight | 2106. trick | 2136. upper |

| | | |
|-----------------|---------------|-----------------|
| 2137. uppermost | 2167. wage | 2197. weekday |
| 2138. upright | 2168. waist | 2198. weekend |
| 2139. upset | 2169. wait | 2199. weigh |
| 2140. urge | 2170. waiter | 2200. weight |
| 2141. urgent | 2171. wake | 2201. welcome |
| 2142. use | 2172. walk | 2202. well |
| 2143. usual | 2173. wall | 2203. west |
| 2144. vain | 2174. wander | 2204. western |
| 2145. valley | 2175. want | 2205. wet |
| 2146. valuable | 2176. war | 2206. what |
| 2147. value | 2177.. warm | 2207. whatever |
| 2148. variety | 2178. warmth | 2208. wheat |
| 2149. various | 2179. warn | 2209. wheel |
| 2150. veil | 2180. wash | 2210. when |
| 2151. verb | 2181. waste | 2211. whenever |
| 2152. verse | 2182. watch | 2212. where |
| 2153. very | 2183. water | 2213. wherever |
| 2154. vessel | 2184. wave | 2214. whether |
| 2155. victory | 2185. wax | 2215. which |
| 2156. view | 2186. way | 2216. whichever |
| 2157. village | 2887. we | 2217. while |
| 2158. violence | 2888. weak | 2218. whip |
| 2159. violent | 2189. weaken | 2219. whisper |
| 2160. virtue | 2190. wealth | 2220. whistle |
| 2161. visit | 2191. weapon | 2221. white |
| 2162. visitor | 2192. wear | 2222. whiten |
| 2163. voice | 2193. weather | 2223. who |
| 2164. vote | 2194. weave | 2224. whoever |
| 2165. vowel | 2195. weed | 2225. whole |
| 2166. voyage | 2196. week | 2226. whom |

| | | |
|---------------|---------------|-----------------|
| 2227. whose | 2247. wise | 2267. would |
| 2228. why | 2248. wish | 2268. wound |
| 2229. wicked | 2249. with | 2269. wrap |
| 2230. wide | 2250. within | 2270. wreck |
| 2231. widen | 2251. without | 2271. wrist |
| 2232. widow | 2252. witness | 2272. write |
| 2233. widower | 2253. woman | 2273. wrong |
| 2234. width | 2254. wonder | 2274. yard |
| 2235. wife | 2255. wood | 2275. year |
| 2236. wild | 2256. wooden | 2276. yellow |
| 2237. will | 2257. wool | 2277. yes |
| 2238. win | 2258. woolen | 2278. yesterday |
| 2239. wind | 2259. word | 2279. yet |
| 2240. window | 2260. work | 2280. yield |
| 2241. wine | 2261. world | 2281. you |
| 2242. wing | 2262. worm | 2282. young |
| 2243. winter | 2263. worry | 2283. youth |
| 2244. wipe | 2264. worse | 2284. zero |
| 2245. wire | 2265. worship | |
| 2246. wisdom | 2266. worth | |

1943



Appendix C

The Academic Word List

The Academic Word List

Headwords of the Academic Word List

This list contains the headwords of the families in the Academic Word List. The numbers indicate the sublist of the Academic Word List. For example, *abandon* and its family members are in sublist 8 of the Academic Word List (Coxhead, 1998).

| | | | | | |
|--------------|----|-----------|----|---------------|----|
| abandon | 8 | area | 1 | code | 4 |
| abstract | 6 | aspect | 2 | coherent | 9 |
| academy | 5 | assemble | 10 | coincide | 9 |
| access | 4 | assess | 1 | collapse | 10 |
| accommodate | 9 | assign | 6 | colleague | 10 |
| accompany | 8 | assist | 2 | commence | 9 |
| accumulate | 8 | assume | 1 | comment | 3 |
| accurate | 6 | assure | 9 | commission | 2 |
| achieve | 2 | attach | 6 | commit | 4 |
| acknowledge | 6 | attain | 9 | commodity | 8 |
| acquire | 2 | attitude | 4 | communicate | 4 |
| adapt | 7 | attribute | 4 | community | 2 |
| adequate | 4 | author | 6 | compatible | 9 |
| adjacent | 10 | authority | 1 | compensate | 3 |
| adjust | 5 | automate | 8 | compile | 10 |
| administrate | 2 | available | 1 | complement | 8 |
| adult | 7 | aware | 5 | complex | 2 |
| advocate | 7 | behalf | 9 | component | 3 |
| affect | 2 | benefit | 1 | compound | 5 |
| aggregate | 6 | bias | 8 | comprehensive | 7 |
| aid | 7 | bond | 6 | comprise | 7 |
| albeit | 10 | brief | 6 | compute | 2 |
| allocate | 6 | bulk | 9 | conceive | 10 |

| | | | | | |
|--------------|---|--------------|---|--------------|----|
| alter | 5 | capable | 6 | concentrate | 4 |
| alternative | 3 | capacity | 5 | concept | 1 |
| ambiguous | 8 | category | 2 | conclude | 2 |
| amend | 5 | cease | 9 | concurrent | 9 |
| analogy | 9 | challenge | 5 | conduct | 2 |
| analyse | 1 | channel | 7 | confer | 4 |
| annual | 4 | chapter | 2 | confine | 9 |
| anticipate | 9 | chart | 8 | confirm | 7 |
| apparent | 4 | chemical | 7 | conflict | 5 |
| append | 8 | circumstance | 3 | conform | 8 |
| appreciate | 8 | cite | 6 | consent | 3 |
| approach | 1 | civil | 4 | consequent | 2 |
| appropriate | 2 | clarify | 8 | considerable | 3 |
| approximate | 4 | classic | 7 | consist | 1 |
| arbitrary | 8 | clause | 5 | constant | 3 |
| constitute | 1 | distinct | 2 | fee | 6 |
| constrain | 3 | distort | 9 | file | 7 |
| construct | 2 | distribute | 1 | final | 2 |
| consult | 5 | diverse | 6 | finance | 1 |
| consume | 2 | document | 3 | finite | 7 |
| contact | 5 | domain | 6 | flexible | 6 |
| contemporary | 8 | domestic | 4 | fluctuate | 8 |
| context | 1 | dominate | 3 | focus | 2 |
| contract | 1 | draft | 5 | format | 9 |
| contradict | 8 | drama | 8 | formula | 1 |
| contrary | 7 | duration | 9 | forthcoming | 10 |
| contrast | 4 | dynamic | 7 | foundation | 7 |
| contribute | 3 | economy | 1 | found | 9 |
| controversy | 9 | edit | 6 | framework | 3 |
| convene | 3 | element | 2 | function | 1 |
| converse | 9 | eliminate | 7 | fund | 3 |
| convert | 7 | emerge | 4 | fundamental | 5 |

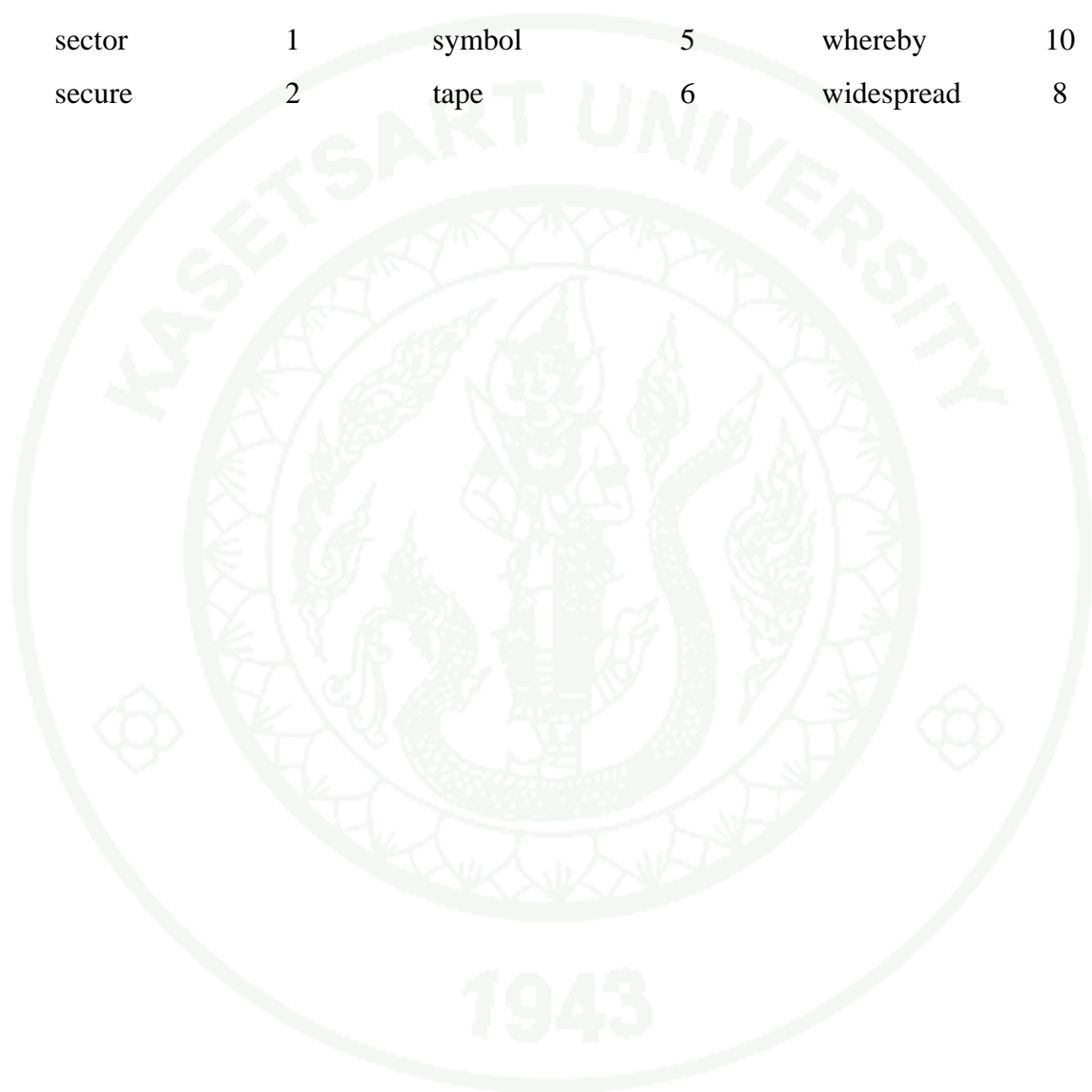
| | | | | | |
|-------------|----|-------------|----|-------------|----|
| convince | 10 | emphasis | 3 | furthermore | 6 |
| cooperate | 6 | empirical | 7 | gender | 6 |
| coordinate | 3 | enable | 5 | generate | 5 |
| core | 3 | encounter | 10 | generation | 5 |
| corporate | 3 | energy | 5 | globe | 7 |
| correspond | 3 | enforce | 5 | goal | 4 |
| couple | 7 | enhance | 6 | grade | 7 |
| create | 1 | enormous | 10 | grant | 4 |
| credit | 2 | ensure | 3 | guarantee | 7 |
| criteria | 3 | entity | 5 | guideline | 8 |
| crucial | 8 | environment | 1 | hence | 4 |
| culture | 2 | equate | 2 | hierarchy | 7 |
| currency | 8 | equip | 7 | highlight | 8 |
| cycle | 4 | equivalent | 5 | hypothesis | 4 |
| data | 1 | erode | 9 | identical | 7 |
| debate | 4 | error | 4 | identify | 1 |
| decade | 7 | establish | 1 | ideology | 7 |
| decline | 5 | estate | 6 | ignorance | 6 |
| deduce | 3 | estimate | 1 | illustrate | 3 |
| define | 1 | ethic | 9 | image | 3 |
| definite | 7 | ethnic | 4 | immigrate | 3 |
| demonstrate | 3 | evaluate | 2 | impact | 2 |
| denote | 8 | eventual | 8 | implement | 4 |
| deny | 7 | evident | 1 | implicate | 4 |
| depress | 10 | evolve | 5 | implicit | 8 |
| derive | 1 | exceed | 6 | imply | 3 |
| design | 2 | exclude | 3 | impose | 4 |
| despite | 4 | exhibit | 8 | incentive | 6 |
| detect | 8 | expand | 5 | incidence | 6 |
| deviate | 8 | expert | 6 | incline | 10 |
| device | 9 | explicit | 6 | income | 1 |
| devote | 9 | exploit | 8 | incorporate | 6 |

| | | | | | |
|---------------|----|------------|---|----------------|----|
| differentiate | 7 | export | 1 | index | 6 |
| dimension | 4 | expose | 5 | indicate | 1 |
| diminish | 9 | external | 5 | individual | 1 |
| discrete | 5 | extract | 7 | induce | 8 |
| discriminate | 6 | facilitate | 5 | inevitable | 8 |
| displace | 8 | factor | 1 | infer | 7 |
| display | 6 | feature | 2 | infrastructure | 8 |
| dispose | 7 | federal | 6 | inherent | 9 |
| inhibit | 6 | manipulate | 8 | panel | 10 |
| initial | 3 | manual | 9 | paradigm | 7 |
| initiate | 6 | margin | 5 | paragraph | 8 |
| injure | 2 | mature | 9 | parallel | 4 |
| innovate | 7 | maximize | 3 | parameter | 4 |
| input | 6 | mechanism | 4 | participate | 2 |
| insert | 7 | media | 7 | partner | 3 |
| insight | 9 | mediate | 9 | passive | 9 |
| inspect | 8 | medical | 5 | perceive | 2 |
| instance | 3 | medium | 9 | percent | 1 |
| institute | 2 | mental | 5 | period | 1 |
| instruct | 6 | method | 1 | persist | 10 |
| integral | 9 | migrate | 6 | perspective | 5 |
| integrate | 4 | military | 9 | phase | 4 |
| integrity | 10 | minimal | 9 | phenomenon | 7 |
| intelligence | 6 | minimize | 8 | philosophy | 3 |
| intense | 8 | minimum | 6 | physical | 3 |
| interact | 3 | ministry | 6 | plus | 8 |
| intermediate | 9 | minor | 3 | policy | 1 |
| internal | 4 | mode | 7 | portion | 9 |
| interpret | 1 | modify | 5 | pose | 10 |
| interval | 6 | monitor | 5 | positive | 2 |
| intervene | 7 | motive | 6 | potential | 2 |
| intrinsic | 10 | mutual | 9 | practitioner | 8 |

| | | | | | |
|-------------|----|-----------------|----|--------------|---|
| invest | 2 | negate | 3 | precede | 6 |
| precise | 5 | research | 1 | submit | 7 |
| predict | 1 | reside | 2 | subordinate | 9 |
| predominant | 8 | resolve | 4 | subsequent | 4 |
| preliminary | 9 | resource | 2 | subsidy | 6 |
| presume | 6 | respond | 1 | substitute | 5 |
| previous | 2 | restore | 8 | successor | 7 |
| primary | 2 | restrain | 9 | sufficient | 3 |
| prime | 5 | restrict | 2 | sum | 4 |
| investigate | 4 | network | 5 | principal | 4 |
| invoke | 10 | neutral | 6 | principle | 1 |
| involve | 1 | nevertheless | 6 | prior | 4 |
| isolate | 7 | nonetheless | 10 | priority | 7 |
| issue | 1 | norm | 9 | proceed | 1 |
| item | 2 | normal | 2 | process | 1 |
| job | 4 | notion | 5 | professional | 4 |
| journal | 2 | notwithstanding | 10 | prohibit | 7 |
| justify | 3 | nuclear | 8 | project | 4 |
| label | 4 | objective | 5 | promote | 4 |
| labour | 1 | obtain | 2 | proportion | 3 |
| layer | 3 | obvious | 4 | prospect | 8 |
| lecture | 6 | occupy | 4 | protocol | 9 |
| legal | 1 | occur | 1 | psychology | 5 |
| legislate | 1 | odd | 10 | publication | 7 |
| levy | 10 | offset | 8 | publish | 3 |
| liberal | 5 | ongoing | 10 | purchase | 2 |
| licence | 5 | option | 4 | pursue | 5 |
| likewise | 10 | orient | 5 | qualitative | 9 |
| link | 3 | outcome | 3 | quote | 7 |
| locate | 3 | output | 4 | radical | 8 |
| logic | 5 | overall | 4 | random | 8 |
| maintain | 2 | overlap | 9 | range | 2 |

| | | | | | |
|------------|----|-----------------|----|------------|----|
| major | 1 | overseas | 6 | ratio | 5 |
| rational | 6 | seek | 2 | target | 5 |
| react | 3 | select | 2 | task | 3 |
| recover | 6 | sequence | 3 | team | 9 |
| refine | 9 | series | 4 | technical | 3 |
| regime | 4 | sex | 3 | technique | 3 |
| region | 2 | shift | 3 | technology | 3 |
| register | 3 | significant | 1 | temporary | 9 |
| regulate | 2 | similar | 1 | tense | 8 |
| reinforce | 8 | simulate | 7 | terminate | 8 |
| reject | 5 | site | 2 | text | 2 |
| relax | 9 | so-called | 10 | theme | 8 |
| release | 7 | sole | 7 | theory | 1 |
| relevant | 2 | somewhat | 7 | thereby | 8 |
| reluctance | 10 | source | 1 | thesis | 7 |
| rely | 3 | specific | 1 | topic | 7 |
| remove | 3 | specify | 3 | trace | 6 |
| require | 1 | sphere | 9 | tradition | 2 |
| vary | 1 | stable | 5 | transfer | 2 |
| vehicle | 8 | statistic | 4 | transform | 6 |
| version | 5 | status | 4 | transit | 5 |
| via | 8 | straightforward | 10 | transmit | 7 |
| violate | 9 | strategy | 2 | transport | 6 |
| retain | 4 | stress | 4 | trend | 5 |
| reveal | 6 | structure | 1 | trigger | 9 |
| revenue | 5 | style | 5 | ultimate | 7 |
| reverse | 7 | virtual | 8 | undergo | 10 |
| revise | 8 | visible | 7 | underlie | 6 |
| revolution | 9 | vision | 9 | undertake | 4 |
| rigid | 8 | visual | 8 | uniform | 8 |
| role | 1 | volume | 3 | unify | 9 |
| route | 9 | summary | 4 | unique | 7 |

| | | | | | |
|----------|---|------------|---|------------|----|
| scenario | 9 | supplement | 9 | utilize | 6 |
| schedule | 8 | survey | 2 | valid | 3 |
| scheme | 3 | survive | 7 | voluntary | 7 |
| scope | 6 | suspend | 9 | welfare | 5 |
| section | 1 | sustain | 5 | whereas | 5 |
| sector | 1 | symbol | 5 | whereby | 10 |
| secure | 2 | tape | 6 | widespread | 8 |



Sublist 1 of the Academic Word List

analyze

analyzed
analyzer
analyzers
analyses
analyzing

analysis

analyst
analysts
analytic
analytical
analytically
analyze
analyzed
analyzes
analyzing

approach

approachable
approached
approaches
approaching
unapproachable

area

areas

assess

assessable
assessed
assesses
assessing

assessment

assume

assumed
assumes
assuming
assumption
assumptions

authority

authoritative
authorities

available

availability
unavailable

benefit

beneficial
beneficiary
beneficiaries
benefited
benefiting
benefits

concept

conception
concepts
conceptual
conceptualization
conceptualize
conceptualized
conceptualizes
conceptualizing
conceptually

consist

assessments
 reassess
 reassessed
 reassessing
 reassessment
 unassessed

consisted
 consistency
consistent
 consistently
 consisting
 consists
 inconsistencies

inconsistency
 inconsistent

define

constitute

constituencies
 constituency
 constituent
 constituents
 constituted
 constitutes
 constituting
 constitution
 constitutions
constitutional
 constitutionally
 constitutive
 unconstitutional

definable
 defined
 defines
 defining
definition
 definitions
 redefine
 redefined
 refines
 redefining
 undefined

context

contexts
 contextual
 contextualize
 contextualized
 contextualizing
 uncontextualized
 contextualize

derive

derivation
 derivations
 derivative
 derivatives
derived
 derives
 deriving

| | | |
|------------------|------------------|---------------------|
| | contextualized | <i>distribute</i> |
| | contextualizing | distributed |
| | uncontextualized | distributing |
| <i>contract</i> | | <i>distribution</i> |
| | contracted | distributional |
| | contracting | distributions |
| | contractor | distributive |
| | contractors | distributor |
| | contracts | distributors |
| <i>create</i> | | redistribute |
| | created | redistributed |
| | crates | redistributes |
| | creating | redistributing |
| | creation | redistribution |
| | creations | <i>economy</i> |
| | creative | <i>economic</i> |
| | creatively | economical |
| | creativity | economically |
| | creator | economics |
| | creators | economies |
| | recreate | economist |
| | recreated | economists |
| | recreates | uneconomical |
| | recreating | <i>environment</i> |
| <i>data</i> | | environmental |
| | | environmentalist |
| | | environmentalists |
| | | environmentally |
| | | environments |
| <i>establish</i> | | <i>formula</i> |
| | disestablish | formulae |

| | |
|--------------------|-------------------|
| disestablished | formulas |
| disestablishes | formulate |
| disestablishing | formulated |
| disestablishment | formulating |
| <i>established</i> | formulation |
| establishes | formulations |
| establishing | reformulate |
| establishment | reformulated |
| establishments | reformulating |
| <i>estimate</i> | reformulation |
| estimated | reformulations |
| estimates | <i>function</i> |
| estimating | functional |
| estimation | functionally |
| estimations | functioned |
| over-estimate | functioning |
| overestimate | functions |
| overestimated | <i>identify</i> |
| overestimates | identifiable |
| overestimating | identification |
| underestimate | <i>identified</i> |
| underestimated | identifies |
| underestimates | identifying |
| underestimating | identities |
| <i>evident</i> | identity |
| evidenced | unidentifiable |
| <i>evidence</i> | <i>income</i> |
| evidential | incomes |
| evidently | <i>indicate</i> |
| <i>export</i> | indicated |
| exported | indicates |
| exporter | indicating |

| | | | |
|------------------|--------------------|-------------------|-----------------|
| | exporters | | indication |
| | exporting | | indications |
| | exports | | indicative |
| <i>factor</i> | | | indicator |
| | factored | | indicators |
| | factoring | <i>individual</i> | |
| | <i>factors</i> | | individualized |
| <i>finance</i> | | | individuality |
| | financed | | individualism |
| | finances | | individualist |
| | <i>financial</i> | | individualists |
| | financially | | individualistic |
| | financier | | individually |
| | financiers | | individuals |
| | financing | | |
| <i>interpret</i> | | | legislator |
| | interpretation | | legislators |
| | interpretations | | legislature |
| | interpretative | <i>major</i> | |
| | interpreted | | majorities |
| | interpreting | | majority |
| | interpretive | <i>method</i> | |
| | interprets | | methodical |
| | misinterpret | | methodological |
| | misinterpretation | | methodologies |
| | misinterpretations | | methodology |
| | misinterpreted | | methods |
| | misinterpreting | <i>occur</i> | |
| | misinterprets | | occurred |
| | reinterpret | | occurrence |
| | reinterpreted | | occurrences |

| | | | |
|------------------|-------------------|------------------|------------------|
| | reinterprets | | occurring |
| | reinterpreting | | occurs |
| | reinterpretation | | reoccur |
| | reinterpretations | | reoccurred |
| <i>involve</i> | | | reoccurring |
| | involved | | reoccurs |
| | involvement | <i>percent</i> | |
| | involves | | percentage |
| | involving | | percentages |
| | uninvolved | | |
| <i>issue</i> | | <i>period</i> | |
| | issued | | periodic |
| | issues | | periodical |
| | issuing | | periodically |
| <i>labor</i> | | | periodicals |
| | labor | | periods |
| | labored | <i>policy</i> | |
| | labors | | policies |
| | labored | <i>principle</i> | |
| | laboring | | principled |
| | labors | | principles |
| <i>legal</i> | | | unprincipled |
| | illegal | <i>proceed</i> | |
| | illegality | | procedural |
| | illegally | | <i>procedure</i> |
| | legality | | procedures |
| | legally | | proceeded |
| <i>legislate</i> | | | proceeding |
| | legislated | | proceedings |
| | legislates | | proceeds |
| | legislating | <i>process</i> | |

legislation

legislative

processed

processes

processing

require

required

requirement

requirements

requires

requiring

specific

specifically

specification

specifications

specificity

specifics

research

researched

researcher

researchers

researches

researching

structure

restructure

restructured

restructures

restructuring

structural

respond

responded

respondent

respondents

responding

responds

response

responses

responsive

responsiveness

unresponsive

structurally

structured

structures

structuring

unstructured

theory

theoretical

theoretically

theories

theorist

theorists

role

roles

section

sectioned

sectioning

| | | |
|--------------------|-----------------|------------------|
| | sections | |
| <i>sector</i> | | |
| | sectors | |
| <i>significant</i> | | <i>vary</i> |
| | insignificant | invariable |
| | insignificantly | invariably |
| | significance | variability |
| | significantly | variable |
| | signified | <i>variables</i> |
| | signifies | variably |
| | signify | variance |
| | signifying | variant |
| <i>similar</i> | | variants |
| | dissimilar | variation |
| | similarities | variations |
| | similarity | varied |
| | similarly | varies |
| <i>source</i> | | varying |
| | sourced | |
| | sources | |
| | sourcing | |

BIOGRAPHICAL DATA

Name and Surname: Miss. Siwaros Chanchanglek
Date of Birth: March 21st, 1984
Place of Birth: Bangkok, Thailand
Educational Background: Bachelor of Art (English),
Chiang Mai University
Work: Manager of the Prominence tutorial
School

