

AN ANALYSIS OF ACADEMIC VOCABULARY IN HEALTH NEWS

A MASTER'S PROJECT

BY

PIYATHIDA CHAIPRADIT

Presented in Partial Fulfillment of the Requirements for the

Master of Arts Degree in English

at Srinakharinwirot University

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**AN ANALYSIS OF ACADEMIC VOCABULARY IN HEALTH NEWS:
A CORPUS-BASED STUDY**

**AN ABSTRACT
BY
PIYATIDA CHAIPRADIT**

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Nitaya Suksaeresup.

The two main objectives of the study were to find the percentage of academic words that appeared in health news collected from *The Nation*, a local newspaper, and to find the 100 most frequently used academic words. The research was conducted within the framework of Coxhead's (2000) *Academic Word List (AWL)*. With the *Concordance Program*, a corpus of 237,131 running words taken from *The Nation* was analyzed to see the AWL. The results revealed that the AWL covered 4.94% of the total words in the corpus, and the top 100 words clearly represented the field of health news. The results indicated that health news could be a useful source of teaching materials for English for Specific Purposes (ESP).

การวิเคราะห์คำศัพท์ทางวิชาการในข่าวสุขภาพ

บทคัดย่อ

โดย

ปิยธิดา ไชยประดิษฐ์

เสนอต่อบัณฑิตวิทยาลัย มหาวิทยาลัยศรีนครินทรวิโรฒ เพื่อเป็นส่วนหนึ่งของการศึกษา

ตามหลักสูตรปริญญาศิลปศาสตรมหาบัณฑิต สาขาวิชาภาษาอังกฤษ

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การศึกษานี้มีวัตถุประสงค์เพื่อสำรวจจำนวนคำศัพท์ทางวิชาการที่ปรากฏในข่าวสุขภาพ จากหนังสือพิมพ์ออนไลน์ *เดอะเนชั่น* และ คำศัพท์วิชาการที่พบมากเป็น 100 อันดับแรกในการศึกษานี้ คำศัพท์วิชาการที่นำมาเป็นกรอบการศึกษานี้คือกลุ่มคำศัพท์วิชาการ (Academic Word List) ซึ่งพัฒนาโดยค็อกซ์ เฮด (2000) การศึกษานี้ได้รวบรวมข้อมูลจากข่าวอิเล็กทรอนิกส์เพื่อสร้าง Corpus จำนวน 237,131 คำ และวิเคราะห์จำนวนคำศัพท์ดังกล่าวด้วยโปรแกรมคอมพิวเตอร์ Concordance ผลการศึกษาพบคำศัพท์วิชาการ 4.94 เปอร์เซ็นต์ ในข่าวเกี่ยวกับสุขภาพ และคำศัพท์ที่พบมากเป็น 100 อันดับแรกนั้นส่วนใหญ่เกี่ยวข้องกับวงการด้านสุขภาพ อาจกล่าวได้ว่าข่าวสุขภาพใช้ประกอบเป็นเอกสารประกอบการสอนภาษาอังกฤษเฉพาะทาง

The Master's Project Committee and Oral Defense Committee have approved this Master's Project as partial fulfillment of the requirements for the Master of Arts degree in English of Srinakharinwirot University.

Master's Project Advisor

Nitaya Suksaeresup

(Assistant Professor Dr. Nitaya Suksaeresup)

Chair of the Master of Arts Program in English

Prapaipan Aimchoo

(Dr. Prapaipan Aimchoo)

Oral Defense Committee

Nitaya Suksaeresup.....Chair

(Assistant Professor Dr. Nitaya Suksaeresup)

Walaiporn Chaya.....Reader

(Dr. Walaiporn Chaya)

Tuanta Laosooksri.....Reader

(Mrs. Tuanta Laosooksri)

This Master's Project has been approved as partial fulfillment of the requirements for the Master of Arts degree in English of Srinakharinwirot University.

C. Pibulchol..... Dean of the Faculty of Humanities

(Associate Professor Chaleosri Pibulchol)

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CHAPTER 1

INTRODUCTION

1.1 Background

People use vocabulary to represent things around them and to describe activities they do in their daily routines. Vocabulary has become an important tool for communication throughout the ages. As humans develop and become more civilized, they need to expand vocabulary to cover new items and new ideas they want to express and communicate. Practically, vocabulary has been added to a large number to meet the needs in communication with people of different careers and people in all walks of life. In general, people use everyday vocabulary to meet the needs in their everyday communication.

People or learners who study English as a second language or as foreign language have to study vocabulary in English for Academic Purposes (EAP) to communicate with English-speaking people in everyday communication. However, as these learners progress to their higher education, they need another set of vocabulary used specifically in their special fields of studies. Therefore they need to know vocabulary in English for Specific Purposes (ESP) to be able to communicate with people in specialized fields in all skills of language in listening, speaking, reading and writing.

In fact, there has been an attempt to compile academic word list. Coxhead spent time placing on computer several hundred written academic texts, about 3.5 million words and analyzed them to see which ones were used most frequently. The 570 words on the Academic Word List are all thought to be important for students preparing for an academic study.

The academic vocabulary will be used as key terms in college courses. Academic vocabulary is the vocabulary critical to the understanding of concepts of the contents taught in schools. Some terms are very important; some terms are useful but not critical; and some terms are interesting but not useful. If the learners have academic vocabulary's knowledge, it is easier for them to understand the information; they will read and use language appropriately for studying.

Like most people who put much concern on health these days, the researcher was interested in health programs which promote and encourage people to develop awareness to have good health habits to take care of themselves and their families. The health topics include nutritious food, food supplement, exercise, prevention against all diseases, home care, office care, public health etc. In reading health news, a certain amount of vocabulary have been found. Some of these words are difficult. As an educator, the researcher believed that it would be helpful if the learners knew at least 100 most frequently used academic words in health news so that they could understand the news when they read for their personal interest or for their specialized field in health or health education. This list of academic words will facilitate their learning and make communication in the written text easier.

1.2 Research Questions

The research aimed at answering the following questions:

1. What is the percentage of AWL words appearing in health news collected from *The Nation*?
2. What are the 100 most frequently used academic words in the Academic Word List (AWL) in health news in the study?

1.3 Scope of the Study

A corpus of words was collected from health news at www.nationmultimedia.com, an online database, from Jan 1, 2006 to December 31, 2006. The analysis was as follows:

1. What is the percentage of AWL words appearing in health news collected from *The Nation*?
2. What are the 100 most frequently used academic words in the Academic Word List (AWL) in health news in the study?

1.4 Significance of the Study

This research aimed to examine the number of academic words in health news collected from *The Nation* newspaper. This study is beneficial as follows:

1. It will reveal the 100 most frequently used academic vocabulary of AWL appearing in health news.
2. It will be the best alternative teaching material for learners of English for Specific Purposes (ESP).

1.5 Definition of terms

1. Academic Words List (AWL)

Academic Words List was developed by Averil Coxhead at the School of Linguistics and Applied Language Studies at Victoria University of Wellington, New Zealand. The list contains 570 word families which appear with great frequency in a broad range of academic texts. The 570 word families are divided into 10 sublists. The sublists are listed in order from the most frequent words to the least.

2. Concordance Program

The Concordance program is a computer program that can be used to analyze the language in real situations. The concordance lists words occurring in a text and arranges them in alphabetical order. It also gives the context in which the word occurs in a given text.

3. Corpus

Corpus is a large collection or a structured set of texts which is used for language analysis.

4. Word Types

Word types are different word forms. A word which is repeated many times is counted only once as a word type.

5. Word Token

Word token refers to the total number of word forms in the text, and it is counted whenever it appears.

6. Health News

Health news refers to the online news and articles written by Thai people about health, health circumstances and other health related issues which is available at www.nationmultimedia.com dated from Jan 1, 2006 to December 31, 2006.

1.6 Overview of The study

This study analyzes academic vocabulary in the corpus of health news. The literature on, language learning and vocabulary learning, corpus study of word list, related literature on academic words, and researches are reviewed in Chapter 2. Chapter 3 shows the analytical tool and procedure. The analytical tool section includes analytical framework and the concordance program. The procedure section concerned data collection, corpus creation, and data analysis. The results of the study are presented in Chapter 4. The last chapter of the study, Chapter 5, discusses the results of the analysis and explains how the AWL words found in corpus of health news differs from Coxhead's AWL. It concludes by discussing the application of the research findings, the limitations of the study, and the suggestions for further studies.

CHAPTER 2

REVIEW OF THE LITERATURE

There are three main parts in this chapter: language learning and vocabulary learning, a corpus study of word list, and related literature on the academic words.

2.1 Language Learning and Vocabulary Learning

Psychologists and language teachers have been interested in vocabulary learning (Levenston, 1979). A person-task-context-strategy model is proposed in a larger framework. Williams and Burden (1997) outlined four aspects of the teaching-learning process, i.e., teachers, learners, tasks, contexts. Theorists and researchers have presented the same framework in slightly different ways. Cohen (2001) focused on learners and discussed the intersection of learning style preferences, learner strategies, and language tasks. Flavell's (1979) conception of the three components of metacognitive knowledge, i.e., person, task, and strategy, also applies in the language learning field (Wenden, 1987). Brown, Bransford, Ferrara, and Campione (1983) included learning activities, characteristics of the learner, criteria tasks, and nature of the materials as the four aspects of their framework for exploring problems of learning. The person-task-context-strategy model can be viewed as:

First, person brings to the language learning situation a wide range of individual differences that will influence the learning rate and the ultimate learning result. The most widely reported learner factors include age, sex, language aptitude, intelligence, prior knowledge, motivation, self-image, personality, cognitive and learning style. These person-dependent factors are quite stable, and determine how a learner approaches a task.

Second, task is the end product in the learner's mind. It can be as broad as mastering a second language or as specific as remembering one meaning of a word. This conception of the

task includes the materials being learned as well as the goal the learner is trying to achieve by using the materials. It should be noted that this conception of "task" is similar to the traditional, broader understanding of task as in Flavell (1979), Wenden (1987), and Williams and Burden (1997), but was different from the more recent and has narrower definition of "task" in "task-based" approaches to language teaching and learning (e.g., Nunan, 1989). Different types of task materials, task purposes, and tasks at various difficulty levels demand different learner strategies. For example, learning words in a word list is different from learning the same words in a passage. A word meaning is different from learning to use the same word in real life situations.

Third, context refers to the learning environment. The context can include the teachers, the peers, the classroom climate, the family support, the social, cultural tradition of learning, the curriculum, and the availability of input and output opportunities. Context is different from language context which refers to the textual or discourse place in which a particular word or structure can be found. Contexts constrain the ways learners approach learning tasks.

Fourth, strategy is a series of actions a learner takes to facilitate the completion of a learning task. A strategy starts when the learner analyzes the task, the situation, and what is available in the repertoire. The learner goes on to select, deploy, monitor, and evaluate the effectiveness of this action, and decides to revise the plan and action. Cohen (1998) distinguishes between language learning strategies and language use strategies, the former being strategies for learning tasks such as remembering, and the latter being strategies for language use.

To summarize, person, task, context, and strategy are interrelated and work together to the learning form. An analysis of learning strategies will never be complete without knowing the person-task-context configuration of the learning situation. Some strategies are more person-dependent, some are more task-dependent, and others are more context-dependent. Each of these task stages demands judgment, choice, and deployment of cognitive strategies for vocabulary

learning. And each strategy a learner uses will determine to a large extent how and how well a new word is learned.

2.1.1 Vocabulary Size

Vocabulary learning is only one component of language skills. It should not be assumed that vocabulary learning is always a prerequisite to the performance of language skills. Vocabulary learning enables language use; language use enables the increase of vocabulary knowledge; knowledge of the world enables the increase of vocabulary knowledge and language use and so on (Nation, 1993). With these cautions in mind vocabulary size and their significance for second language learners should be discussed.

According to Beck and McKeown (1991), vocabulary size was probably the oldest type of vocabulary research. During the 20th century, scores of studies focused on vocabulary size. For example, Graves (1986) explained that studies of vocabulary size conducted prior to 1960 resulted in estimates ranging from 2,500 to 26,000 words for typical first-grade students, and from about 19,000 to 200,000 words for university graduate students. These discrepancies were due to lack of specificity regarding (a) differences between words and word families (e.g., is a student who knows the meaning of *run*, *ran*, and *running* credited with knowing one, two, or three words?); (b) definitions of word knowledge (e.g., recognizing the meaning of a word in a multiple-choice question versus producing a definition for the word); and (c) the source used to represent English vocabulary (e.g., dictionaries versus word frequency lists) (Beck & McKeown, 1991).

Nagy and Anderson (1984) attempted to determine the number of printed words used in English materials in grades 3 through 9 by examining the textbooks, workbooks, novels, magazines, and encyclopedias used in the classroom. Their estimate of 88,533 word families is now widely used as the domain of words that students in grades 3 through 9 are expected to know.

Beck and McKeown (1991) provided another estimate of the number of words students know by examining recent studies that used more defined criteria following the tradition established by Nagy and Anderson (1984). Through more precise measures, for example, estimates of the vocabulary size for 5- to 6-year-olds dropped from a range of between 2,500 to 26,000 words to between 2,500 to 5,000 words.

In summary, Vocabulary sizes have become more consistent for the last 10 years. Methodological procedures have helped reduce past variances include defining more precisely the domain of words being drawn to assess knowledge, and considering the difference between words and word families.

2.1.2 Vocabulary Acquisition

Learners need to develop their vocabulary strongly and urgently at the beginning of reading skills so as to be able to engage successfully in the volume of reading necessary to learn large numbers of word meanings through reading connected text (Anderson & Nagy, 1991). The only realistic chance students with poor vocabularies have to catch up to the peers with rich vocabularies requires that they engage in extraordinary amounts of independent reading. Furthermore, it is found that opportunities for developing adequate reading skills are limited. Stanovich (1986) explained how the development of strong beginning reading skills facilitated vocabulary growth, which in turn facilitated the further increases in reading. This reciprocal, causal relation between reading and vocabulary seems to continue unabated throughout development.

Beck and McKeown (1991) asserted that word meanings are routinely acquired from context. Their conclusion was that some learning from context does occur, but that the effect is not very powerful. A number of other studies have examined the effects of learning words through normal reading activities. For example, Jenkins, Stein, and Wysocki (1984) studied the effects of learning words in context with fifth-grade students. The contexts were created so that a

word's meaning was either strongly implied or a synonym was provided. Jenkins et al. found that students learned the meaning of words that had been encountered six or ten times, unless exposure to meaning occurred prior to passage reading, in which case two encounters were sufficient to produce positive effects.

Even though independent reading may not be an efficient way to learn word meanings, the procedure does not have to be efficient to be effective, and thus, to result in powerful overall effects (Anderson & Nagy, 1991). Students in the primary and middle grades read anywhere from 100,000 to over 10,000,000 words of connected text per year (Nagy & Anderson, 1984), it is unnecessary for students to be efficient in deriving the meaning of words from text for the procedure to result in considerable vocabulary learning.

In summary, Vocabulary acquisition is crucial to academic development. Not only do students need a rich body of word knowledge to succeed in basic skill areas, they also need a specialized vocabulary to learn content area material. A foundation of vocabulary knowledge must be in place early if children are going to perform successfully in school. The following points cover the findings of recent research on vocabulary acquisition.

2.2 Corpus Study of Word List

A corpus is originated from Latin. Its plural is corpora. In linguistics and lexicography, a body of texts, utterances or other specimens considered more or less representative of a language, and usually stored as an electronic database. Currently, computer corpora may store many millions of running words, whose features can be analyzed by means of *tagging* (the addition of identifying and classifying tags to words and other formations) and the use of concordancing programs. Corpus linguistics studies data in any such corpus). (McArthur, 1992) a corpus of academic words in English was developed for the purpose of finding out which words occurred in a wide range of academic texts from a variety of subject areas. This coverage

indicates that the list is predominantly academic in nature. For example, The AWL provides useful information about the words which learners will meet in a wide range of academic texts. The list also provides a useful basis for further research into the nature of academic vocabulary. The division of this word list into smaller, frequency-based sublists helps sequencing teaching and planning for teaching materials, so that a systematic approach to vocabulary learning can be taken.

2.3 Related Literature on Academic Words

There have been studies related to academic words in the following. Sokmen's (1997) criteria for designing computerized vocabulary activities reflect theoretical and research insights from several different perspectives. The first criterion of specializing on a "useful corpus" has a powerful impact on L2 vocabulary acquisition studies. For the last 20 years, a larger corpora of materials in various genres (e.g., academic textbooks in English) have been analyzed using powerful computers. This has allowed researchers to identify which recurring words and phrases a language learner would profit most from studying, given his or her learning goals (e.g., Biber, Conrad, & Reppen, 1994; McCarthy & Carter, 1997; Schmitt, 2004; Simpson & Mendis, 2003). Lists of frequent English word families and the extent to which they offer coverage of particular genres have been explored by L2 vocabulary acquisition researchers such as Coxhead (2000), Laufer (1992), Nation and Waring (1997), Sutarsyah, Nation, and Kennedy, (1994) and others in the case of English, and by Cobb and Horst (2004) in the case of French.

Coxhead (2000) reported a new academic word list (AWL), which is of great interest for students and teachers. The words in AWL are ones which university students of English must thoroughly be familiar with for both reading and writing academic prose. AWL contains 570 "words" which have both high frequency and high coverage in academic texts, irrespective of subject area and discipline. These 570 "words" are word-forms, head-words plus their inflected and derived forms, and totally around 3,100 word-forms altogether, eg: *concept, conception, concepts, conceptual, conceptualisation, conceptualise, conceptualised, conceptualises,*

conceptualising, conceptually. To prepare the list, Coxhead used a corpus of 3.5 million words, plus software which can calculate how often a word occurs, and how many different texts in the corpus it occurs in. The texts are from academic journals and university textbooks from four main areas: arts, commerce, law, and natural science. AWL does not include any of the 2,000 most frequent words in English, as specified in the standard *General Service List* (West 1953), but only words outside these very frequent words.

2.4 Previous Research

According to previous research, Nakprakorn(2005) reported the top 50 words in the AWL found in political news. The corpus of 122,811 running words taken from the local online newspaper, *The Nation*, was analyzed against the AWL of 570 words by using the *Concordance Program*. The results in the AWL covered words 5.7% of the total words in the corpus.

Similarly, Dejtisak(2006) presented about the 50 most frequently used academic words found in the sports news. A corpus of 102,050 running words taken from an online newspaper *The Nation* was analyzed against the AWL of 570 words by using the *Concordance Program*. The results of the study showed that words in the AWL covered 1.79% of the total words in the corpus and the used words in the corpus clearly reflected the field of sports news.

In conclusion, this chapter has shown some ideas of language learning and vocabulary learning, corpus study of word list, and related literature on the academic words. In the first section, the empirical researches on vocabulary learning strategies are reviewed academic word learning, and the need for and nature of academic vocabulary.

In the next chapter the researcher describes the methodology of the study.

CHAPTER 3

METHODOLOGY

This chapter consists of two sections: analytical tool and procedures. The analytical tool section aims to give details about the analytical framework: the *Academic Word List* (AWL), and the *Concordance Program*. The procedure section includes data collection, corpus creation, and data analysis.

3.1 Analytical Tool

3.1.1 Analytical Framework

Academic Word List (AWL) compiled by Coxhead was used as research framework. Actually, Coxhead aimed to compile the AWL as a purpose to meet the specific vocabulary needs of student in higher education. Generally, students at the higher education level take different majors and study in different fields in a wide range of disciplines, so they need vocabulary in specific fields. Coxhead developed the AWL from approximately 3,500,000 running words from written academic texts.

3.1.2 The Concordance Program

The *Concordance Program* is a computer program that the researcher employed to analyze the language used in real situations in order to identify academic words in the corpus of health in the research.

3.2 Procedures

This section includes data collection, corpus creation and data analysis.

3.2.1 Data Collection

The data used in this study were health vocabulary taken from the online database in www.nationmultimedia.com dated from January 1, 2006 to December 31, 2006.

3.2.2 Corpus Creation

The steps in creating the corpus were the following:

a) All health reports and news were taken from the website whose homepage showed different kinds of archives which were categorized into small sections such as sports, education, politics, health and editorial. Then the health news was copied one at a time.

b) Dates and month in the health news was removed from the texts. Only the headlines and body of news were copied into a folder. Because on the top of every page listed a phrase saying, “published on (date/month/year),” the phrase might affect the frequency of word list.

c) Each text of health news was kept in a health folder. The corpus was accumulated until fully developed.

d) The corpus was transferred into a hard drive in a personal computer for the analysis.

3.2.3 Data Analysis

The researcher used the *Concordance Program* to produce the corpus of health and the AWL of Coxhead was used as framework of data analysis to answer the answer research question 1: what is the percentage of AWL words appearing in health news collected from *the nation*?

The steps used to analyze the data in order to answer the research question were the following:

a) The total word tokens of the corpus were searched by using *Make Full*

Concordance.

b) The program presented total word tokens of the corpus.

c) The number of all word tokens of the *Concordance* built from the corpus was kept in a file.

d) The total AWL words were calculated by using the *Concordance's Pick List* tool. The tool added the total words of the AWL, headwords and their families. After that the AWL word tokens were obtained.

e) The percentage of the AWL was obtained by using the following formula:

$$\text{the percentage of the AWL} = \frac{\text{total AWL word tokens (d)} \times 100}{\text{total word tokens in the corpus (b)}}$$

The second research question was “What are the 100 most frequent academic words appearing in health news?”

In order to answer this question, the researcher did the following:

a) find the frequency of each word in the AWL.

b) identify the 100 most frequently used academic words.

c) present and report the 100 most frequently used academic words.

In summary, a big corpus consisting of more than 100,000 words was analyzed by using a computer program as an analytical tool. The corpus has presented under the corpus creation and the *Concordance Program*. The next chapter presents the result of this study.

CHAPTER 4

FINDINGS

This chapter reports the findings of the study which answer to the following research questions.

1. What is the percentage of AWL words appearing in health news collected from *The Nation*?
2. What are the 100 most frequent academic words in the *Academic Word List* (AWL) about health news in the study?

The results of the study are presented and discussed. The tables are used to illustrate the overall academic words in the corpus of health news such as word tokens, word families, and total word types.

Table 1: Word types, word tokens and the coverage of the AWL in the corpus of health news.

Type of words	Number of words
The AWL word families	479
The AWL word types	1,549
The AWL word tokens	11,703
Total word types in the corpus	19,153
Total word tokens in the corpus	237,131
The AWL coverage (%)	4.94

Table 1 demonstrates Academic word types, total academic word types in the corpus, total word tokens and the AWL coverage in health news corpus. Academic word types in the corpus accounted for 8.08% of total word types in the corpus (1,549 out of 19,153), meanwhile academic word tokens accounted for 4.94% of total word tokens in the corpus (11,703 out of 237,131). That is to say, 4.94% was the coverage of academic words in the corpus of health news. In conclusion, the academic words in the corpus were more than Coxhead's (2000) AWL, and 19,153 shows vocabulary size in the corpus of the health news.

In order to answer the second question, the 100 most frequently used academic words about health news were collected and demonstrated in Table 2.

Table 2 The 100 most frequently used academic words in the corpus of health news.

	Word families	Frequency	Percentage
1	medical	571	4.88
2	research	534	4.56
3	consume	458	3.91
4	capable	447	3.82
5	sex	339	2.90
6	public	312	2.67
7	ministry	306	2.61
8	considerable	356	3.04
9	issue	352	3.01
10	institute	349	2.98
11	scheme	340	2.91
12	major	340	2.91
13	promote	338	2.89
14	project	338	2.89
15	survey	338	2.89
16	administrate	337	2.88
17	focus	336	2.87
18	conduct	336	2.87
19	qualitative	335	2.86
20	secure	334	2.85
21	seek	333	2.85
22	benefit	334	2.85
23	expert	330	2.82
24	export	329	2.81
25	factor	327	2.79
26	globe	326	2.79
27	foundation	326	2.79
28	policy	325	2.78
29	sidtribute	325	2.78
30	region	324	2.77
31	commit	323	2.76
32	legal	323	2.76
33	invest	322	2.75
34	require	322	2.75
35	sufficient	322	2.75

Table 2 (continued)

	Word families	Frequency	Percentage
36	finance	322	2.75
37	motive	310	2.65
38	facilitate	286	2.44
39	fund	281	2.40
40	network	281	2.40
41	range	240	2.05
42	technology	236	2.02
43	process	236	2.02
44	unify	236	2.02
45	capacity	220	1.88
46	potential	220	1.88
47	topic	220	1.88
48	assist	220	1.88
49	aware	220	1.88
50	civil	220	1.88
51	estimate	220	1.88
52	expand	219	1.87
53	mental	219	1.87
54	tradition	219	1.87
55	complement	218	1.86
56	contribute	218	1.86
57	culture	218	1.86
58	community	217	1.85
59	energy	217	1.85
60	nevertheless	217	1.85
61	confer	217	1.85
62	constitute	217	1.85
63	physical	217	1.85
64	trend	216	1.85
65	exceed	216	1.85
66	vary	216	1.85
67	affect	216	1.85
68	area	215	1.84
69	authority	215	1.84
70	available	215	1.84

Table 2 (continued)

	Word families	Frequency	Percentage
71	respond	215	1.84
72	similar	215	1.84
73	approach	215	1.84
74	create	204	1.74
75	demonstrate	204	1.74
76	consult	204	1.74
77	controversy	204	1.74
78	data	204	1.74
79	identify	203	1.73
80	license	203	1.73
81	enable	203	1.73
82	expose	200	1.71
83	income	193	1.65
84	sector	193	1.65
85	equip	193	1.65
86	implement	193	1.65
87	involve	179	1.53
88	enforce	172	1.47
89	final	158	1.35
90	prime	154	1.32
91	supplement	154	1.32
92	team	154	1.32
93	annual	133	1.14
94	detect	102	0.87
95	domestic	96	0.82
96	generation	91	0.78
97	partner	91	0.78
98	positive	76	0.65
99	target	76	0.65
100	alternative	76	0.65

Table 2 shows the 100 most frequently used academic words in the corpus of health news. Some words have the equal frequency of use.

From the study, the most frequently used 100 words clearly reflected the field of the corpus of health news e.g. *medical, research, consume, capable, sex, public, ministry, considerable, and issue*. The word *medical* had the highest frequency of occurrence (571 or 4.88 %), while the words *positive, target, and alternative* had the lowest frequency of occurrence (76 or 0.65%).

In order to examine academic vocabulary which can be discovered in a text, an example about health in the corpus is presented. A sample of health news shows academic vocabulary found in the study as follows.

Sleep Disorders are a Rising Concern

Published on June 23, 2006

Thailand is part of global *trend* of increasing sleep disorders that *contribute* largely to road accidents, *physical* and *mental* illnesses as well as social and *economic* losses, *experts* warned yesterday.

The *difference*, however, is the understanding and *resources* necessary to deal with the problem remain scarce here, said Dr Nittaya J Kotchabhakdi, a paediatrician *involved* in studies of sleep disorders in children at Ramathibodi Hospital.

Recent *research* found that about 38 per cent of Thai adults suffered a *moderate* degree of sleep problems and 15 per cent had severe problems, said Assoc Prof Naiphinich Kotchabhakdi, director of Mahidol University's Neuro-Behavioural Biology Centre.

The figures were very close to the global statistics *compiled* by the World Health Organisation, he said. "Sleep disruption *contributes* to about 20 per cent of road accidents in Thailand," said Naiphinich.

Caused by *various factors* including lack of sleep and alcohol *consumption*, sleeping at the wheel was the main cause of road accidents in the country, he said.

Recent studies in the West had also linked sleep problems to many other ailments including strokes, coronary heart disease, type 2 diabetes and high blood pressure, said Naiphinich, who is a leading *researcher* in the new field of "sleep medicine".

People with poor sleep hygiene were also *found* to have emotional and *behavioural* problems, he said.

Nittaya said her *research* had *found* that about one-fourth of children suffered sleep problems between birth and 18 years of age.

As in adults, the most common problems included insomnia, disrupted sleep, nightmares, lack of sleep and sleep apnoea, Nittaya said.

The problem of lack of sleep, for example, was **found** to get worse as children grew older, she said, adding that getting to sleep late and waking up late was of particular concern in teenagers.

Nittaya's study, which was **conducted** on 1,600 people, including 315 teenagers, in five provinces - both rural and urban, **found** that as many as 35 per cent of the teenage sample group had sleep problems.

She said people with problems, such as lack of sleep, were **found** to have emotional and **behavioural** disorders, but added: "We cannot say exactly that sleeping problems were the direct cause of these problems, but they are associated."

Teenagers with sleeping problems were also **found** to lose the ability to work or study normally six days per week, compared with only a day per week in normal counterparts, Nittaya said.

And **ongoing** study at her department has even **found** an alarming **trend** of sleeping problems in infants, she said.

"So all ages of people are **affected** by sleep disorders to some **extent**," she said.

Apart from outside **factors** such as bad sleep habits, sleeping disorders could also be caused by **physical** and **mental factors**, said Pichet Udomrat, a professor of psychiatry at Songkhla University's Sleep Disorders Service and **Research** Centre. These **factors** include certain diseases including Parkinson's, strokes, depression and anxiety disorders, said Pichet, who is also the president of the Psychiatric Association of Thailand.

To raise **awareness** about the importance of sleep hygiene, Thailand will host the 2nd World Congress of Sleep Medicine in Bangkok in February in conjunction with Association of Sleep Medicine. The first congress was held in Berlin a couple of years ago.

The above sample shows academic words which can be accounted for health news. There are 24 academic words about health in the sample news (in bold and italics), which are *adults*, *affect*, *awareness*, *compile*, *conduct*, *consumption*, *contribute*, *couple*, *depression* *economic*, *expert*, *factor*, *found*, *global*, *involve*, *link*, *mental*, *normal*, *ongoing*, *physical*, *research*, *resource*, *statistic*, *trend*.

Table 3: Word families in the AWL that did not occur in the corpus of health news.

abandon	concept	denote	implicate	manual	percent	tape
abstract	conclude	deviate	implicit	margin	predominant	transit
accumulate	coincide	devote	incline	mature	preliminary	underlie
arbitrary	colleague	distort	incorporate	maximize	prohibit	utilise
attain	commerce	domain	index	mechanism	protocol	virtual
bond	comment	duration	induce	media	radical	whereby
bulk	compatible	edit	inhibit	mediate	sequence	widespread
cease	compile	encounter	input	minimise	simulate	
challenge	complex	entity	insert	nuclear	specify	
chapter	discriminate	equate	intrinsic	restrain	sphere	
chart	displace	intermediate	invoke	parallel	straightforward	
chemical	distinct	interval	layer	parameter	subordinate	
clarify	constrain	hierarchy	liberal	participate	successor	
classic	cover	impact	manipulate	perceive	symbol	

Table 3 indicates the 91 word families that did not show up in health news. The disappearance of the 91 word families in the AWL occurred in the corpus. This suggests that some words may be found frequently in a particular field, in chemistry-related topic or research papers. However, it is interesting to remark that most of the disappearance words occur infrequently in an academic text.

It can be concluded from the results in Table 2 that the number of academic words in the corpus about health related news was less than those in Coxhead's (2000) AWL. There were 19,153 academic word tokens or 479 academic word types found in the corpus about health related in news, but 91 academic words did not occur in the corpus. The disappearance of these words can be explained that some words may be frequently used in a particular field, for example, in business texts or political news.

However, this is not surprising because academic words are naturally found in academic texts. From the study, there are 2 words which occurred more than 500 times: *medical, and research*.

It can be explained that “medical” can happen in various forms (*medical and medically*) and “research” can also occur in various forms (*research, researched, researcher, researchers, researches, and researching*). Thus, it can cover more meaning in health news than *medical of research*.

The next chapter focuses on discussion on the results, suggestions for applications and further studies.

CHAPTER 5

CONCLUSION AND DISCUSSION

This chapter discusses the results of the analysis and answers the two research questions about the percentage of AWL words in the corpus of health news and the one hundred words from the AWL used in the corpus. Then application of results, limitation of the study, and suggestions for further studies are presented.

5.1 Conclusion

The results of the study generate an academic vocabulary knowledge in health news.

Research question 1: What is the percentage of AWL words appearing in health news collected from *The Nation*? The answer to this question is the AWL words accounted for 4.94 % of all word tokens in the corpus of health news. There were 11,703 academic words taken out of the number of 237,131 word tokens in the corpus.

Research question 2: What are the 100 most frequent academic words in the Academic Word List (AWL) appearing in health news in the study? The answer to this question is the 100 most frequently used academic words in the corpus related to the field of health shown in Table 2. From the corpus, *medical* is the most frequently used academic word, occurred 571 times or accounted for 4.88 %. It was followed by *research* (with occurrence of 534 times or 4.56 %) and then *consume* (458 times or 3.91 %). The least frequently used words were *target*, *and* *alternative*, all of which had the same frequency of use 0.65%.

To answer these questions, it is crucial to know what specialized or additional English vocabulary instruction might need in order to be better prepared for the vocabulary demands of their academic texts, required writing, and other coursework.

5.2 Discussion

As a starting point in the introduction, the results of this study would be helpful if the learners knew at least 100 most frequently used academic words in health news so that they could understand the news when they read for personal interest or for their specialized field in health or health education. This study may be new thinking about the need of vocabulary instruction for language with the ultimate goal of promoting the success as learners. The findings of this study revealed a source of academic vocabulary and create an alternative way to study vocabulary for general or learners who study English as a second language or as a foreign language. In addition, it is likely that lack of familiarity with academic vocabulary in textbooks will hinder L2 readers' ability to comprehend the material on their own. Academic words may be especially difficult for L2 readers to learn because they are not frequently used in speech or in non-academic texts (Nation, 1990). The results offer important characteristics of academic vocabulary in the corpus of health news and should be taken into account in deciding whether this kind of text should be used as useful materials for public people in general to know academic words, and for the people who work in health related field .

According to the study, the number of academic words in health related news was different from Coxhead's (2000) study. Coxhead mentions that her AWL includes 570 word families which account for 10 % of the total tokens in the Academic Corpus, and less than 94% of words in the list occur in 20 or more the 28 subject areas of academic

corpus. In the study, the words from the AWL had 4.94% coverage of the health related news from *The Nation* online news database. The findings showed that the percentage of academic words was average. Even the coverage of the health related news is less than Coxhead's 10% coverage of academic texts; it can be acceptable as one of effective sources for foreign language to study. Moreover, an alternative learning material like newspaper can be useful in learning academic words because they can provide learners with new words in updated contexts. In addition, online newspaper can be the great source with personal interest or for the specialized field in health or health education. In a 1997 review of research-informed techniques for teaching and learning L2 vocabulary, Sokmen issued the following challenge to designers of software for language learners: "There is a need for programs which specialize on a useful corpus, provide expanded rehearsal, and engage the learner on deeper levels and in a variety of ways as they practice vocabulary. There is also the fairly uncharted world of the Internet as a source for meaningful vocabulary activities for the classroom and for the independent learner" (p. 257). It pointed that the Internet has become familiar territory for both course developers and language learners. The Internet is more than a source; it is also a medium through which to learn.

In sum, Health news can be appropriately applied to personal interest or for the specialized field in health or health education. Several issues concerning the AWL in the corpus of health news have been discussed. However, learners should read more to expand and reach all the 570 words families.

5.3 Application of results

1. The Concordance Program is a very useful tool for text analysis in language communication. Concordance lines may be used to highlight some words in the AWL in context by monitoring the occurrences of particular words and phrases then saving texts in plain text files and using them to make a concordance form. It is possible that the learners are presented with appropriate contexts for the use of vocabulary. This concordance program on the computer enables us to search texts that we are already familiar with, so the context is clearer. Furthermore, the highlighted vocabulary always comes with collocations that learners can understand in different situations.

2. The academic vocabulary in the corpus of health related news which has been found in this study may be useful for studying English for Specific Purposes and for the people who are interested in the health field. The learner must be familiar with those words. The teacher should create language activities focusing on the vocabulary to enhance language communication skills.

3. Learners from the beginner to higher education level can use the interactive concordance to study vocabulary by their own self-study. However, it will be helpful if the teachers explain to learners how to use a software program before.

In summary, this part has provided the value of the Concordance Program in Academic Word List (AWL) for language learners in the health field and the other related subjects. The learners can learn vocabulary through self-study. Also, the findings from this study may be beneficial information for learners in English for Specific Purpose program and all people who are interested in the health field.

5.4 Limitations of the Study

The study has some limitations because the data of this study were compiled from local news from only one source, *The Nation*. In addition, most of the health related news in the corpus was written by local Thai people. Therefore, the corpus might not be representative of health subjects as compared with other international sources, for example, *The Sun*, *Times*, *CNN*, or *BBC*.

Another limitation is that the results of this study might not be exactly the same as others from similar research in the future because the data were unique and dependent on the situations occurring only at a certain period of time. Thus, the findings were unique in the characteristics of the health issues in the news from *The Nation* in the year of 2006.

Moreover, the study was conducted with a small number of corpus; further investigations with larger corpus might be needed so that the findings may be generalized. Moreover, studies which compare the learning effects of high and low proficiency results may be beneficial.

5.5 Suggestions for Further Studies

Future studies could productively build on this study as follows: (1) it should be conducted with only a corpus of health related news. There should be similar research with other genres, such as advertising, arts, law or technology. Also, there should be more research with a bigger size of news from different kinds of sources: *CNN*, *BBC*, *The Sun*, *Times*, *Bangkok Post* and etc; (2) there would be an alternative source for learners and people who are interested in the health field apart from newspapers. Thus, there should be a comparative study of the AWL in a spoken corpus; and (3) the study should also be a comparative study of academic words in a corpus of health related news in a

Thai newspaper and an international newspaper. Future research should also investigate whether the concordance-based method would also help increase reading proficiency.

Finally, the study can conclude that learning tools used the design and preparation of the concordance-based method are an important factor contributing to success; future research may aim at designing and developing classroom materials that will bring about optimal benefits and adapt them to their own purposes.

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APPENDIX

THE ACADEMIC WORD LIST (AWL)

The following list consists of the head-words in AWL , which takes the 570 head-word families in the list adapted in Coxhead (2000) and re-ordered the list by frequency groups, from "group 1" (most frequent) to "group 10" (least frequent).

abandon	abstract	academy	access
accommodate	accompany	accumulate	accurate
achieve	acknowledge	acquire	adapt
adequate	adjacent	adjust	administrate
adult	advocate	affect	aggregate
aid	albeit	allocate	alter
alternative	ambiguous	amend	analogy
analyse	annual	anticipate	apparent
append	appreciate	approach	appropriate
approximate	arbitrary	area	aspect
assemble	assess	assign	assist
assume	assure	attach	attain
attitude	attribute	author	authority
automate	available	aware	behalf
benefit	bias	bond	brief
bulk	capable	capacity	category
cease	challenge	channel	chapter
chart	chemical	circumstance	cite
civil	clarify	classic	clause
code	coherent	coincide	collapse
colleague	commence	comment	commission

commit	commodity	communicate	community
compatible	compensate	compile	complement
complex	component	compound	comprehensive
comprise	compute	conceive	concentrate
concept	conclude	concurrent	conduct
confer	confine	confirm	conflict
conform	consent	consequent	considerable
consist	constant	constitute	constrain
construct	consult	consume	contact
contemporary	context	contract	contradict
contrary	contrast	contribute	controversy
convene	converse	convert	convince
cooperate	coordinate	core	corporate
correspond	couple	create	credit
criteria	crucial	culture	currency
cycle	data	debate	decade
decline	deduce	define	definite
demonstrate	denote	deny	depress
derive	design	despite	detect
deviate	device	devote	differentiate
dimension	diminish	discrete	discriminate
displace	display	dispose	distinct
distort	distribute	diverse	document
domain	domestic	dominate	draft
drama	duration	dynamic	economy

edit	element	eliminate	emerge
emphasis	empirical	enable	encounter
energy	enforce	enhance	enormous
ensure	entity	environment	equate
equip	equivalent	erode	error
establish	estate	estimate	ethic
ethnic	evaluate	eventual	evident
evolve	exceed	exclude	exhibit
expand	expert	explicit	exploit
export	expose	external	extract
facilitate	factor	feature	federal
fee	file	final	finance
finite	flexible	fluctuate	focus
format	formula	forthcoming	foundation
found	framework	function	fund
fundamental	furthermore	gender	generate
generation	globe	goal	grade
grant	guarantee	guideline	hence
hierarchy	highlight	hypothesis	identical
identify	ideology	ignorance	illustrate
image	immigrate	impact	implement
implicate	implicit	imply	impose
incentive	incidence	incline	income
incorporate	index	indicate	individual

induce	inevitable	infer	infrastructure
inherent	inhibit	initial	initiate
injure	innovate	input	insert
insight	inspect	instance	institute
instruct	integral	integrate	integrity
intelligence	intense	interact	intermediate
internal	interpret	interval	intervene
intrinsic	invest	investigate	invoke
involve	isolate	issue	item
job	journal	justify	label
labour	layer	lecture	legal
legislate	levy	liberal	licence
likewise	link	locate	logic
maintain	major	manipulate	manual
margin	mature	maximize	mechanism
media	mediate	medical	medium
mental	method	migrate	military
minimal	minimise	minimum	ministry
minor	mode	modify	monitor
motive	mutual	negate	network
neutral	nevertheless	nonetheless	norm
normal	notion	notwithstanding	nuclear
objective	obtain	obvious	occupy
occur	odd	offset	ongoing
option	orient	outcome	output

overall	overlap	overseas	panel
paradigm	paragraph	parallel	parameter
participate	partner	passive	perceive
percent	period	persist	perspective
phase	phenomenon	philosophy	physical
plus	policy	portion	pose
positive	potential	practitioner	precede
precise	predict	predominant	preliminary
presume	previous	primary	prime
principal	principle	prior	priority
proceed	process	professional	prohibit
project	promote	proportion	prospect
protocol	psychology	publication	publish
purchase	pursue	qualitative	quote
radical	random	range	ratio
rational	react	recover	refine
regime	region	register	regulate
reinforce	reject	relax	release
relevant	reluctance	rely	remove
require	research	reside	resolve
resource	respond	restore	restrain
restrict	retain	reveal	revenue
reverse	revise	revolution	rigid
role	route	scenario	schedule
scheme	scope	section	sector

secure	seek	select	sequence
series	sex	shift	significant
similar	simulate	site	so-called
sole	somewhat	source	specific
specify	sphere	stable	statistic
status	straightforward	strategy	stress
structure	style	submit	subordinate
subsequent	subsidy	substitute	successor
sufficient	sum	summary	supplement
survey	survive	suspend	sustain
symbol	tape	target	task
team	technical	technique	technology
temporary	tense	terminate	text
theme	theory	thereby	thesis
topic	trace	tradition	transfer
transform	transit	transmit	transport
trend	trigger	ultimate	undergo
underlie	undertake	uniform	unify
unique	utilise	valid	vary
vehicle	version	via	violate
virtual	visible	vision	visual
volume	voluntary	welfare	whereas
whereby	widespread		

And re-ordered the list by frequency groups, from "group 1" (most frequent) to "group 10" (least frequent).

group 1

analyse	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
labour	legal	legislate	major	method
occur	percent	period	policy	principle
proceed	process	require	research	respond
role	section	sector	significant	similar
source	specific	structure	theory	vary

group 2

achieve	acquire	administrate	affect	appropriate
aspect	assist	category	chapter	commission
community	complex	compute	conclude	conduct
consequent	construct	consume	credit	culture
design	distinct	element	equate	evaluate
feature	final	focus	impact	injure

institute	invest	item	journal	maintain
normal	obtain	participate	perceive	positive
potential	previous	primary	purchase	range
region	regulate	relevant	reside	resource
restrict	secure	seek	select	site
strategy	survey	text	tradition	transfer

group 3

alternative	circumstance	comment	compensate	component
consent	considerable	constant	constrain	contribute
convene	coordinate	core	corporate	correspond
criteria	deduce	demonstrate	document	dominate
emphasis	ensure	exclude	framework	fund
illustrate	immigrate	imply	initial	instance
interact	justify	layer	link	locate
maximise	minor	negate	outcome	partner
philosophy	physical	proportion	publish	react
register	rely	remove	scheme	sequence
sex	shift	specify	sufficient	task
technical	technique	technology	valid	volume

group 4

access	adequate	annual	apparent	approximate
attitude	attribute	civil	code	commit
communicate	concentrate	confer	contrast	cycle
debate	despite	dimension	domestic	emerge

error	ethnic	goal	grant	hence
hypothesis	implement	implicate	impose	integrate
internal	investigate	job	label	mechanism
obvious	occupy	option	output	overall
parallel	parameter	phase	predict	principal
prior	professional	project	promote	regime
resolve	retain	series	statistic	status
stress	subsequent	sum	summary	undertake

group 5

academy	adjust	alter	amend	aware
capacity	challenge	clause	compound	conflict
consult	contact	decline	discrete	draft
enable	energy	enforce	entity	equivalent
evolve	expand	expose	external	facilitate
fundamental	generate	generation	image	liberal
licence	logic	margin	medical	mental
modify	monitor	network	notion	objective
orient	perspective	precise	prime	psychology
pursue	ratio	reject	revenue	stable
style	substitute	sustain	symbol	target
transit	trend	version	welfare	whereas

group 6

abstract	accurate	acknowledge	aggregate	allocate
assign	attach	author	bond	brief
capable	cite	cooperate	discriminate	display
diverse	domain	edit	enhance	estate
exceed	expert	explicit	federal	fee
flexible	furthermore	gender	ignorant	incentive
incidence	incorporate	index	inhibit	initiate
input	instruct	intelligence	interval	lecture
migrate	minimum	ministry	motive	neutral
nevertheless	overseas	precede	presume	rational
recover	reveal	scope	subsidy	tape
trace	transform	transport	underlie	utilise

group 7

adapt	adult	advocate	aid	channel
chemical	classic	comprise	confirm	comprehensive
contrary	convert	couple	decade	definite
deny	differentiate	dispose	dynamic	eliminate
empirical	equip	extract	file	finite
foundation	globe	grade	guarantee	hierarchy
identical	ideology	infer	innovate	insert
intervene	isolate	media	mode	paradigm
phenomenon	priority	prohibit	publication	quote
release	reverse	simulate	sole	somewhat

submit	successor	survive	thesis	topic
transmit	ultimate	unique	visible	voluntary

group 8

abandon	accompany	accumulate	ambiguous	append
appreciate	arbitrary	automate	bias	chart
clarify	commodity	complement	conform	contemporary
contradict	crucial	currency	denote	detect
deviate	displace	drama	eventual	exhibit
exploit	fluctuate	guideline	highlight	implicit
induce	inevitable	inspect	intense	infrastructure
manipulate	minimise	nuclear	offset	paragraph
plus	practitioner	prospect	radical	predominant
random	reinforce	restore	revise	schedule
tense	terminate	theme	thereby	uniform
vehicle	via	virtual	visual	widespread

group 9

accommodate	analogy	anticipate	assure	attain
behalf	bulk	cease	coherent	coincide
commence	compatible	concurrent	confine	controversy
converse	device	devote	diminish	distort
duration	erode	ethic	format	founded
inherent	insight	integral	intermediate	manual

mature	mediate	medium	military	minimal
mutual	norm	overlap	passive	portion
preliminary	protocol	qualitative	refine	relax
restrain	revolution	rigid	route	scenario
sphere	subordinate	supplement	suspend	team
temporary	trigger	unify	violate	vision

group 10

adjacent	albeit	assemble	collapse	colleague
compile	conceive	convince	depress	encounter
enormous	forthcoming	incline	integrity	intrinsic
invoke	levy	likewise	nonetheless	notwithstanding
odd	ongoing	panel	persist	pose
reluctance	so-called	straightforward	undergo	whereby

VITAE

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Name: Ms. Piyathida Chaipradit
Date of Birth: September 4, 1978
Place of Birth: Bangkok
Address: 246/8 Soi 9 Ladprao 93 Rd., Wangthonglang
Bangkok 10310

Educational Background:

2007 Master of Arts (English)
Srinakharinwirot University, Bangkok
2001 Bachelor of Arts (Business English)
Assumption University, Bangkok.
1996 Communication Operation
Civil Aviation Training Center, Bangkok.