

A pilot corpus study on nursing students' acquisition of nursing terminology

Yoko Watanabe, Emiko Ubukawa, Alexander von Altenstadt

Gunma Prefectural College of Health Sciences

Objectives : The purpose of this study was to examine the degree to which nursing students in a health science college acquired technical English vocabulary based on a comparison of vocabulary data that appeared in their essays describing what they learned from the English I course over the semester and in two English textbooks.

Methods : Based on the concept of corpus linguistics, a computer concordancer program was utilized for word-frequency analysis based on a word list, or 'concordance', which the concordancer produced from the digitalized data from two English textbooks and original essays from 70 students. Furthermore, the extracted words were compared based on the following three categories: 'content words', 'function words', and 'nursing and health care-related words'.

Results : The students applied 54 % of the nursing and health care-related terms learned from the two textbooks. It appears that the students applied more technical terms from the reading textbook than from the conversation textbook (28 % of from the reading textbook; 14 % from the conversation textbook). In particular, the terms 'nurse' and 'patient' were among the three most frequently used nursing and health care-related content words in the three corpora. Pronouns, articles, prepositions, and conjunctions were the most important function words for producing English sentence structures as indicated by their presence in the top ten lists for the three corpora.

Conclusions : From this study, it appears that reading textbooks enrich students' vocabulary more than conversation textbooks as reading textbooks provide a larger volume of vocabulary than a conversational discourse in conversation textbooks. This study on vocabulary acquisition might offer educators some insights into the pedagogy of specific terminology in English for a specific purpose.

Key words : concordancer, corpus linguistics, function words, content words, nursing and health care-related words, English for a specific purpose (ESP)

I Introduction

As Maher ¹⁾ regards English as an international language of medicine, it goes without saying that it is necessary for students majoring in nursing to acquire English. The fact that more than one third of nurses feel the need to understand medical terminology based on needs analysis research of clinical nurses makes it clear that it is important for them to

understand articles related to medicine and nursing ²⁾. In addition, Watanabe's study on the use of English in medical records also indicates the importance of English terminology in a health care field, with the fact that most of the English words appeared in the records are names for medical equipments and diseases ³⁾. Naturally it is essential for English teachers to choose appropriate texts related to the students' future profession, nursing, in this study.

The aim of this study is to investigate the characteristics of English words used in textbooks for nursing and to examine to what degree the students who learn English by using the textbooks could acquire English vocabulary for nursing. First, with the help of a computer word count concordancer program, we would like to do research on what kind of nursing and health care related terms are frequently used in the text with which we taught English I to freshmen majoring in nursing at Gunma Prefectural College of Health Sciences (GCHS). Secondly, we will examine what kinds of nursing and health care related terms were of frequent use in students' essays about *What they learned from English I*, which were required to be submitted in the last class after completing English I, offered in the first semester in 2005, by using the text including nursing and health care related terms. This paper will make it clear that the English text related to professions is effective for the students to learn English and make them conscious of their own professions.

II Corpus analysis of texts

II-1 Subjects and methods

The subjects were 70 students out of 80 majoring in nursing at GCHS. Seventy students were divided into two classes, N1 and N2. Ten of the 80 students did not enroll in English I N1 and N2 in the first semester of 2005. Students had two English classes per week; each class lasted 90 minutes and the total number of classes they took was 30 classes from April to July 2005.

The word frequencies in digitalized scan-

ned texts (see the next section) were computed by a computer concordancer, AntConc 3.0⁴⁾ and put into order in Excel 2003. Two of the investigators of this research analyzed the concordance lists and categorized each word into 3 categories; nursing and health care related terms as category #1, content words in general as category #2, and function words in general as category #3. According to Richards and Schmidt⁵⁾, the definition of 'content words' is "words which refer to a thing, quality, state, or action and which have meaning (lexical meaning) when the words are used alone. Content words are mainly nouns, verbs, adjectives, and adverbs, e.g. *book, run, musical, quickly,*" to which we included 'proper nouns'. At the same token, 'function words' are "words which have little meaning on their own, but show grammatical relationships in and between sentences (grammatical meaning). Conjunctions, prepositions, articles, e.g. *and, to, the,* are function words." We regarded the vocabulary such as 'pronoun, article, copula (be-verb), preposition, auxiliary, conjunction, apostrophe s' as 'function words'⁶⁾⁷⁾⁸⁾.

II-2 Descriptions of classes and texts

The purpose of English I is to enhance both reading comprehension skills and communication skills, and to acquire basic nursing and health care vocabulary and phrases. The texts used in English I, which is one of the required subjects for freshmen, were *Health Talk: English for Hands-on Nursing* (HT)⁹⁾ and *Silent Partners—Nursing Episodes—*(SP)¹⁰⁾. The former text was used for reinforcing conversation skills, and the latter one for improv-

ing reading skills. HT, with which the students can learn to communicate with inpatients or outpatients, includes a fair amount of nursing and health care terms such as the names of body parts, essential nursing skills, and medical appliances many freshmen have been unfamiliar with. Since visual materials such as videos can make students feel as if they were in real clinical fields, HT was chosen to implement new vocabulary to freshmen, specifically for their future profession, nursing, and seems to be very effective for them to learn English for nursing. SP is also a text for reading with many more technical terms than the English texts they were accustomed to in high school. The text is made up of 12 episodes written by twelve nurses living in English speaking countries. The real experiences written about by nurses make it possible for students to learn not only nursing English but also about lots of problems nurses face during their clinical experience. Both N1 and N2 were required to attend one class for each of the reading and conversation classes per week.

Next, we would like to indicate how we used each text in each class.

1) *Health Talk : English for Hands-on Nursing* (HT)

This textbook has been focused on essential nursing skills which all nursing students are required to learn. Each unit contains a dialogue carried out between a nurse and a patient in the hospital to create an authentic conversation which could very likely take place in a real clinical site. The contents that students covered were 'Hospital Admission,

The Nurses' Role, Life in the Hospital, Taking Vital Signs, Providing Meal Assistance, Rehabilitation, Shampooing in Bed, Foot-bath, and Taking a Blood Sample'. Students watched and listened to a video for the English conversation and observed techniques a nurse would apply in caring for patients in the hospital. Students practiced a conversation in pairs and learned colloquial expressions specifically for nursing and caring for a patient through various types of exercises in the textbook. Students performed a conversation skit that they chose from the dialogue in the textbook for their oral examination, which was videotaped as well. Hence, in total, the vocabulary used in the textbook is all related to caring and nursing for patient's daily life in the hospital, rather than medical terms such as disease names or pathology related terms, *per se*. The goal of this textbook is to implement nursing vocabulary to new nursing students and to raise their motivation for learning English conversation using a clinical situation for their future profession.

2) *Silent Partners—Nursing Episodes—*(SP)

SP has two main purposes. One is to improve the understanding of the English text and the other is to give opportunities to think about nursing related issues.

From Chapter 1 to Chapter 4, students were asked some questions relating to the content of the episode so that they could gain a better comprehension of the text. Grammatical points and what each pronoun indicates were stressed in order to understand the content better. After finishing the comprehension

check and exercises in the text, we induced students to think about what the title of the episode meant, since not only nurses' real experiences but also the significance of nursing was written about in the text. For example, especially in Chapter 4, the title "Mirror" has such a significant meaning that students were asked to consider what "Mirror" meant in the episode. Considering the meaning of the title "Mirror" encouraged students to improve their understanding of the relationship between nurses and patients. In the episode, "Mirror" is a description written as a self-reflection when looking after others. In the chapter, helping the patient escape from domestic abuse can lead to the nurse thinking about her own life again. Students read many episodes and carefully thought about their meanings. Then writing their opinions about the episode they read made them grasp the author's intended meaning about the main theme of each chapter.

From Chapter 5 to 11, students were divided into 7 groups and required to give a presentation of one chapter chosen by the group based on Nishimura's class activity report¹¹⁾. Not only the content of each episode but also what the group researched on diseases mentioned in each episode on the Internet or in books were orally presented as a group presentation. They could broaden their knowledge of diseases they had not been familiar with, not to mention learning English. After each presentation, the teacher explained some important grammatical points and asked students to compose English sentences using important expressions they had learned in each chapter.

The students were orally informed of this classroom research and of their final essays on *What they learned from English I* during the last class carried out in July 2005 and gave their consent to the research by submitting their essays a week later. The nature of this research did not invade any of the students' individual privacy at all since none of the students' names were recorded by a concordancer.

III Results

The computer concordancer used to analyze the frequency of occurrence of each word used by the students sorted the results in three separate groups; one group each for Learner's Corpus (LC), Health Talk (HT), and Silent Partners (SP) (see Table 1). The words were listed together with their frequency of occurrence overall in a descending order of occurrence (see Table 3 and 4). The analysis was done separately for different types of words by two of the researchers manually twice. The three word categories were 1) Function words, 2) Content words and 3) Health care related terms.

III-1 General findings

Firstly, as for the students' digitalized essay texts excluding students' names and titles, students produced in writing 12,223 words in total in the essays, which amounted to 174 word texts being produced by each of the 70 students on average. After sorting out the data by the concordancer, AntConc3.0⁴⁾, the total number of types of words used in Learners' Corpus (LC) was computed to be

1,252, which consisted of 77 function words and 1,175 content words, including 217 health care related words (Table 1). Unknown abbreviations, incorrectly scanned words, or mistyped words were excluded (Table 2), which were found mostly in LC, but found less in HT and SP. The total numbers of words in HT and SP, extracted from the main texts only without titles, were shown in Table 1 as well.

Table 1 Total numbers of words in each category

Category / Number (#)	LC	HT	SP
Total # of words	12,223	3,926	6,028
Types of words	1,252	673	1,541
Function words	77	83	104
Content words	1,175	590	1,437
[types of health care related words in content words]	[217]	[232]	[444]

Notes: LC -- Learners' Corpus
HT -- Health Talk
SP -- Silent Partners

III-2 Characteristics of the three corpora

1) Function words

Table 3 indicates the characteristics of function words used in LC, HT and SP from the results of the analyzed concordance lists. Based on this result, the words used most frequently such as *I*, *the*, *and*, *a*, and *to* seemed to be common in the three corpora and ranked in the top five in LC and SP. The other five words in LC such as *of*, *in*, *was*, *that* and *it*, could be found in either one of the two corpora's top ten list, although they were listed in a different order.

The words such as *you* and *is* in HT indicate that this textbook is written in a conversational manner, not in a formal manner. In other words, there are interlocutors who carry out oral speech in a present tense in each unit, which is the nature of this textbook. The words such as *her* and *she* in SP also indicate the nature of the reading text, since the words

Table 2 Examples of misread words in Learners' Corpus :

letters/words misread by a scanner or a computer, or mistyped by students

	Misread words	Correct information	Mistyped words	Correct words
1	x	"	wont	want
2	ci	I	aand	and
3	t	't	Cas	'cause
	ft	't	enhlish	English
5	s	's and unknown	helth	health
6	fs	's	hest	chest
7	d	I 'd, ,, /, ", : or unknown	mast	most
8	dbut	but	mently	mentally
9	dof	of	nerses	nurse
10	esilent	silent	partoners	partners
11	etherapeutic	therapeutic	pertoners	partners
12	fil	'll	reading	reading
13	fve	've	revieed	relieved
14	ghow	how	sirent	silent
15	gsirent	silent	studing	studying
16	hthought	thought	trough	through
17	wProviding	: providing	eglish	English

Notes: Symbols such as ", /, . and the space key on Japanese keyboards can be misread as unknown letters such as e-, c-, d-, f-, g-, h-, w-.

are third person singulars and often the main characters in each unit are female nurses who narrate their experiences in a written manner, here an essay type of discourse.

2) Health care related words in content words

Table 4 presents the list of health care related words found in the content words of the three corpora. Examining the word list of LC, the top ten words, such as *nurse*, *blood*, *patient*, *care* and *medical*, appear commonly in this list as shown in Table 4. Further 18 percent of the content words of LC were health care related words which students applied in their writing reflecting their own learning from English I classes.

According to the list of content words, 27 of health care related terms in LC commonly appeared among the three corpora as indicated with the asterisks***, 61 of them could be traced in SP with ++ marks, and 31 of them commonly appeared in HT with ^^ marks. In total, Fig. 1 illustrates the ratio of the common health care related words in LC. Forty per-

cent (12% plus 28%) of health care related words in LC commonly appeared in SP, which indicates a larger ratio than that in HT (26% : 14% plus 12%). Yet, 12% of them were common among the three corpora. Most importantly 54% of the words which students used in their essays could be traced in the HT and SP corpora. The number of the health care related words which commonly appeared between HT and SP was 45, although it was not the main concern of this study.

Generally speaking, the health care related terms, which the researchers considered to be important for the nursing students to learn during the first year, did not appear as frequently as other general content words such as *English* (191), *learned* (162), *very* (79) and *thought* (56) (also see Table 3).

In conclusion, students appeared to apply vocabulary learned from the two English textbooks, specifically written for nursing students, in their essays reflecting their learning in English I classes.

Table 3 The top 10 function words used in the three corpora

	Learners' Corpus : 77 w.		Health Talk : 83 w.		Silent Partners : 104 w.	
	Frequency	Words	Frequency	Words	Frequency	Words
1	685	I***	143	you	236	the***
2	312	a***	134	I***	168	to***
3	309	the***	127	the***	161	and***
4	297	to***	93	your	160	I***
5	290	and***	86	to***	142	a***
6	281	of**	76	a***	140	her
7	244	in**	71	it**	122	she
8	203	was**	47	and***	121	was**
9	150	that**	47	is	107	of**
10	148	it**	40	that**	86	in**

Notes : w. is an abbreviation for words.

*** indicates that the common words in the three corpora.

** indicates that the common words in the two corpora.

Boldfaced words appear to present the characteristics of the texts.

Table 4 The list of health care related words in the content words of the three corpora

	Learners' Corpus: 1175 w. HCW: 217 w.		Health Talk: 590 w. HCW: 232 w.		Silent Partners: 1437 w. HCW: 444 w.	
	Freq.	Words	Freq.	Words	Freq.	Words
1	99	nurse***	152	nurse	20	nurse
2	98	patient***	98	Mrs.	18	nursing
3	85	medical***	44	Mrs. (Lee, Suzuki, etc)	18	patient
4	59	nursing ++	31	do	16	patients
5	39	health***	16	arm	14	life
6	35	care***	16	hand	14	T. T.
7	21	disease***	15	bed	12	care
8	20	blood***	13	blood	12	took
9	19	hospital***	12	patient	11	pain
10	16	vital ++	9	well	10	Dr.
11	14	rehabilitation ^^	8	bath	9	asked
12	14	TT ++	8	fine	9	heart
13	14	well***	8	left	8	eyes
14	13	dignity ++	8	room	8	nurses
15	12	situation	7	around	7	cancer
16	11	life ++	7	hair	7	help
17	11	meal	7	head	7	tube
18	11	signs ++	7	Ms.	7	well
19	11	weak	6	cold	6	called
20	10	Alzheimer ++	6	feeling	6	felt
21	10	death ++	6	feet	6	give
22	10	domestic ++	6	paralyzed	6	touch
23	10	touch ++	6	pressure	6	body
24	10	violence ++	6	test	5	alive
25	8	living ++	5	pain	5	cardiac
26	8	hand***	5	wheelchair	5	death
27	7	aids ++	4	bedside	5	disease
28	7	bed***	4	care	5	ER
29	7	fresh ++	4	chair	5	hospital
30	7	sample ^^	4	examinations	5	medical
31	7	therapeutic ++	4	foot	5	training
32	7	treatment ++	4	nervous	5	hands
33	6	appliance	4	operation	4	admitted
34	6	artery	4	relax	4	Alzheimer
35	6	assistance	4	side	4	blood
36	6	bath ^^	4	stomach	4	breathing
37	6	practical	4	temperature	4	charge
38	6	pressure***	4	warm	4	control
39	6	situations ++	4	wash	4	dead
40	6	temperature ^^	3	back	4	die
41	6	help ++	3	bend	4	emergency
42	5	abused ++	3	call	4	face
43	5	bedside***	3	clean	4	failure
44	5	clinical	3	diet	4	healing
45	5	condition ++	3	fluids	4	local
46	5	diseases	3	holder	4	need
47	5	Dr. ++	3	hurt	4	physician
48	5	method ^^	3	hurts	4	rest
49	5	pain ^^	3	incision	4	take
50	5	part	3	itchy	4	code
51	5	practice***	3	meals	4	doctor
52	5	practicing	3	preparations	3	aids
53	5	technical	3	pulse	3	appointment
54	5	dying	3	x-ray	3	arm
55	4	ADHD ++	3	relaxed	3	bed
56	4	anxiety ++	3	rest	3	career
57	4	died	3	sample	3	center
58	4	foot***	3	shifts	3	comfort
59	4	impressed	3	sleep	3	congestive

60	4	medicine***	3	sleepy	3	counselor
61	4	mental	3	thermometer	3	CPR
62	4	problems ++	3	tourniquet	3	depression
63	4	providing	3	practice	3	died
64	4	pulse***	2	arms	3	doctors
65	4	seriou s++	2	basin	3	dressed
66	4	shampoo ^^	2	beside	3	dying
67	4	shampooing ^^	2	bowels	3	edema
68	4	training ++	2	button	3	energy
69	4	uneasiness	2	cardgan	3	hand
70	3	check ++	2	cardiovascular	3	helps
71	3	depressed ++	2	chest	3	intensive
72	3	euthanasia	2	cough	3	IV
73	3	examination ^^	2	cuff	3	legs
74	3	face***	2	ease	3	losses
75	3	hospice	2	effect	3	medicine
76	3	ill ++	2	fist	3	mind
77	3	paralyzed ^^	2	floor	3	parents
78	3	relaxation	2	headache	3	part
79	3	treatments ++	2	height	3	poor
80	3	wheelchair	2	inserts	3	practice
81	2	abuse ^^	2	knee	3	practitioner
82	2	anxieties	2	manage	3	puzzled
83	2	ask	2	massage	3	security
84	2	cancer ++	2	medical	3	severe
85	2	careful	2	method	3	sign
86	2	crutch	2	neck	3	staff
87	2	doctors	2	needle	3	stage
88	2	gown	2	pace	3	stay
89	2	healing ++	2	primary	3	swallow
90	2	HIV ++	2	rail	3	therapeutic
91	2	hospitals	2	rehabilitation	3	treated
92	2	injured ++	2	routine	3	treatment
93	2	nervous***	2	shoulders	3	ventilator
94	2	operation ++	2	sick	2	abuse
95	2	overcome	2	stiff	2	abused
96	2	Parkinson ++	2	thumb	2	ambulance
97	2	physical	2	toes	2	attack
98	2	practiced	2	towel	2	bedside
99	2	relax ^^	2	vessel	2	breast
100	2	sick ^^	2	ward	2	bruises
101	2	stretcher	2	washed	2	caregivers
102	2	suffered ++	2	wet	2	caring
103	2	supplies ++	2	bottom	2	case
104	2	therapy	2	breath	2	chemotherapy
105	2	vein	2	doctor	2	chew
106	2	vessel ^^	2	hospital	2	condition
107	2	emotion ++	2	trouble	2	conditions
108	2	exam	1	adhesive	2	conference
109	2	support ++	1	admitted	2	confused
110	2	symptom	1	alcohol	2	consciousness
111	2	therapeutic	1	allergic	2	covered
112	1	anatomy	1	angle	2	crisis
113	1	armpit ^^	1	appetite	2	dextroamphetamine
114	1	attend	1	armpit	2	diagnosed
115	1	basin ^^	1	bathroom	2	dignity
116	1	bedpan	1	beep	2	duties
117	1	bruises ++	1	bidet	2	duty
118	1	button***	1	bleed	2	ears
119	1	calm ++	1	bleeding	2	ED
120	1	caring ++	1	bloated	2	elderly
121	1	carotid	1	body	2	emotion
122	1	cart	1	bowel	2	emphysema
123	1	chemotherapy ++	1	brush	2	fear

124	1	clients	1	cap	2	feeling
125	1	cough ^^	1	cape	2	feet
126	1	die	1	cc	2	fractures
127	1	discharged ++	1	celsius	2	fresh
128	1	doctor ++	1	constipation	2	grief
129	1	dressed ++	1	degrees	2	silent
130	1	drip	1	discharge	2	head
131	1	ECG	1	disease	2	helped
132	1	edema ++	1	disinfect	2	kill
133	1	electrocardiogram	1	disinfection	2	living
134	1	emergencies ^^	1	drowsy	2	medication
135	1	encourage	1	dull	2	metastatic
136	1	ethic	1	earplugs	2	monitor
137	1	ethics	1	elbow	2	mouth
138	1	examine	1	emergencies	2	mysterious
139	1	facial ++	1	emesis	2	needed
140	1	feed	1	examination	2	nervous
141	1	feelings ++	1	exhale	2	observations
142	1	fever	1	face	2	partners
143	1	fist	1	feeding	2	pediatrician
144	1	gauging	1	footrest	2	perform
145	1	hardship	1	gauze	2	physical
146	1	heal	1	hairline	2	pill
147	1	heart ^^	1	handle	2	prejudice
148	1	helps ++	1	hands	2	respiratory
149	1	hospices	1	health	2	rooms
150	1	hospitalization ^^	1	heart	2	senior
151	1	infectious	1	hospitalization	2	sense
152	1	intravenous***	1	infants	2	serious
153	1	loftland	1	inhale	2	service
154	1	massage ^^	1	instructions	2	shift
155	1	measurement	1	intercom	2	skill
156	1	measuring	1	internal	2	skin
157	1	medication ++	1	itch	2	sound
158	1	monitor ++	1	IV (Intravenous drip)	2	sounds
159	1	nausea***	1	knees	2	stethoscope
160	1	needle***	1	lie	2	suffered
161	1	nerves ++	1	lift	2	supplies
162	1	operated ++	1	lukewarm	2	support
163	1	organ	1	medicine	2	syringe
164	1	overcame	1	mouth	2	tough
165	1	oxygen ++	1	muscles	2	vacant
166	1	paralysis	1	nausea	2	violence
167	1	phenomena	1	nutritionists	2	visit
168	1	phlegm ^^	1	observes	2	ward
169	1	plastic ^^	1	outpatient	2	wounds
170	1	postoperative	1	painful	2	ill
171	1	practitioner ++	1	pajama	2	shoulder
172	1	puzzling	1	pajamas	2	alert
173	1	quadripod	1	phlegm	2	clean
174	1	qualification	1	pieces	2	drug
175	1	rehabilitate	1	pillow	2	endotracheal
176	1	rehabilitations	1	porridge	2	hospice
177	1	relieved ^^	1	portions	2	injection
178	1	removing	1	position	2	inserted
179	1	rub ^^	1	posture	1	abdominal
180	1	serve	1	preferences	1	abrasions
181	1	services	1	preparation	1	absorbed
182	1	shaft	1	prepare	1	accident
183	1	sheet	1	prepares	1	aches
184	1	sicknesses	1	press	1	ADHD
185	1	sickroom	1	problem	1	adjusted
186	1	sign***	1	process	1	admission
187	1	skills	1	proud	1	agency

188	1	sphygmomanometer	1	queasy	1	amount
189	1	spiritual	1	rails	1	anger
190	1	stethoscope***	1	raising	1	antibiotics
191	1	sting^^	1	recover	1	antidepressants
192	1	struggling	1	refreshed	1	anxiety
193	1	sympathize	1	relieved	1	aphasic
194	1	techniques	1	remove	1	arms
195	1	technology	1	removed	1	arthritis
196	1	temporal	1	rinsing	1	assessment
197	1	terminal	1	role	1	attached
198	1	terminally ++	1	rub	1	attention
199	1	thermometer^^	1	scrub	1	attentive
200	1	thermometry	1	shampoo	1	babies
201	1	thumb^^	1	shampooing	1	baby
202	1	thumping^^	1	sign	1	bandaged
203	1	tiresome	1	sink	1	bandages
204	1	tourniquet^^	1	sleeping	1	bathe
205	1	trauma ++	1	slight	1	battered
206	1	treat	1	smell	1	behavioral
207	1	treated ++	1	soak	1	belongings
208	1	tub	1	sort	1	bent
209	1	tube***	1	squeezes	1	bites
210	1	utilize	1	staff	1	bleeding
211	1	value	1	station	1	bodies
212	1	vessels	1	stethoscope	1	bone
213	1	ward***	1	sting	1	break
214	1	wash^^	1	strength	1	breath
215	1	waste	1	suffer	1	breathe
216	1	worried	1	sweaty	1	button
217	1	wound ++	1	swollen	1	call
218	191	English	1	thigh	1	calm
219	162	learned	1	thumping	1	capable
220	79	very	1	tight	1	car
221	57	thought	1	toilet	1	carinii
222	56	class	1	tube	1	carry
223	55	not	1	TV	1	carrying
224	54	lot	1	twists	1	catheters
225	53	able	1	uncomfortable	1	causes
226	53	study	1	underneath	1	celebration
227	51	think	1	urinate	1	cessation
228	43	talk	1	vacuum	1	change
229	43	various	1	washbowl	1	charting
230	42	want	1	watery	1	check
231	40	had	1	western	1	chronic
232	39	there	1	wrap	1	cleaned
233	37	have	50	l (Mrs. L)	1	clothes
234	37	when	47	right	1	community
235	36	important	40	Mr	1	compassionate
236	35	many	31	let	1	complexity
237	35	silent	31	now		
238	33	more	31	okay		~omitted~
239	33	how	28	all	1	vivid
240	32	words	21	T (Mrs. T)	1	wheeled
241	31	chapter	21	like	1	wound
242	31	thing	19	put	1	wrist (the 444th word)
243	31	through	19	so	57	had
		~omitted~		~omitted~		~omitted~
1175	1	yellow	1	won (the 590th)	1	youngest (the 1437th)

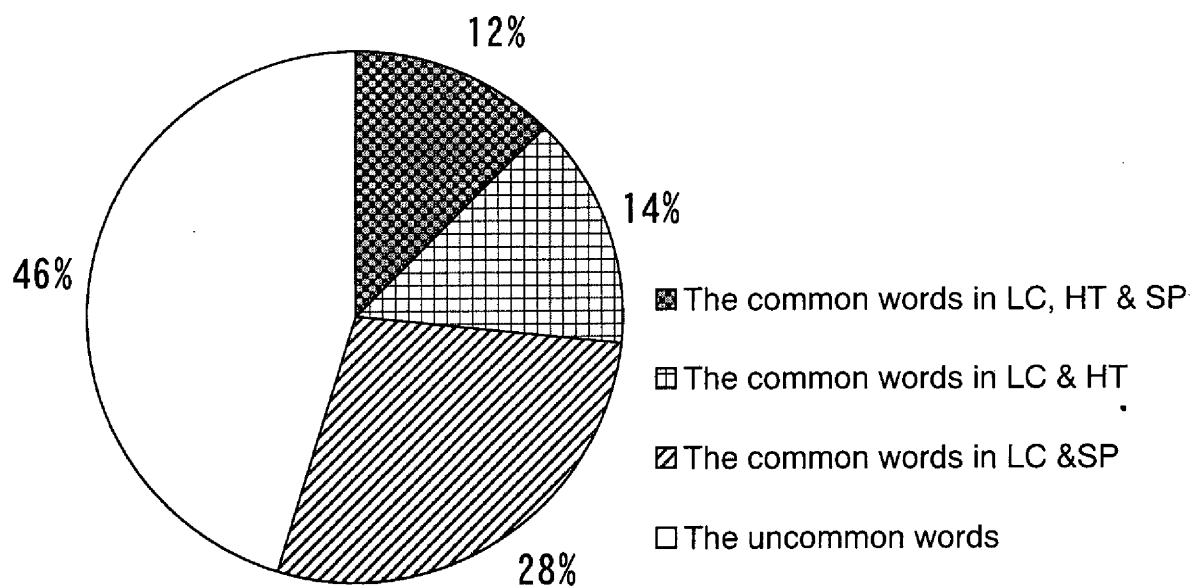
Notes: *** indicates the common words in the three corpora.

^^ indicates the common words in LC and HT.

++ indicates the common words in LC and SP.

HCW is an abbreviation for health care related words, Freq. is for frequency, and w. is for words.

Fig. 1 The ratio of the common health care related words in Learner's Corpus



Note: The number of the common words in HT & SP was 45.

IV Discussion

In this survey we have shown to what degree the students could acquire health care related English vocabulary by using English textbooks specifically for nursing students. The most notable results in this survey, as shown in Fig. 1, seem to indicate a strong association between words commonly used by students and the vocabulary frequently appearing in HT and SP. Especially the students applied more vocabulary from the SP word list in their writing than from the HT list, which is a natural consequence since SP included the larger volume of vocabulary as well as in terms of health care related words. Also the subjects for the measurement we took for the survey was students' written essays, which were not supposed to be presented in an informal conversation discourse type as in HT.

However, the total ratio of the health care related words used by students from the two textbooks amounted to 54 percent, which fulfilled the purpose of the English I classes. As Tohno argues¹²⁾, although there is a subjective intention or ideology of a writer or teacher who guides students by using a particular textbook, the results presented here suggest that students could be influenced by a large 'input' from textbooks. If that is the case, the students who have the clear goal to become a nurse in the future should learn the basic vocabulary used in their professional 'discourse community'¹³⁾¹⁴⁾. It became clear that the words 'nurse' and 'patient' are central in the two textbooks which was reflected in students' essays. Although this may be an obvious result, yet it was shown objectively based on a computer analysis, not by arbitrary human instinct, which used to be applied to most of

linguistic research in the past ¹⁵⁾¹⁶⁾.

In addition, the role of function words was revealed to be indispensable and essential to form both oral and written discourse. From Table 3, the function words, such as articles, pronouns, copulae, prepositions and conjunctions, are the most frequently used words in conjunction with other words to accomplish human speech acts. This high degree of apparent 'word acquisition' may be more due to the nature of the English language and the essential need, indicating the distinctive features of the English language. For instance, there are no prepositions existing in the Japanese language, although the equivalent markers could be --ni, --de, --e, --no called 'joshi', a postpositional particle in Japanese. The high degree of the importance of these function words was highlighted from this study in teaching English to Japanese students.

It can be concluded that students can obtain much more information about nursing and health care related terminology and later use the expressions frequently with the use of English textbooks written specifically for nursing students.

Lastly, some of the words used by the learners could not fit into any of the three categories and were listed separately under misread, misspelled or mistyped words in Table 2. To reduce occurrence of such words in the Learners' Corpus the teachers could explain and encourage the use of the spell check function, incorporated in the computer software program, as well as emphasize the importance of carefully reading the final draft, so that the frequency of illegible words due to

carelessness, lack of computer keyboard skills or trouble with using English on a Japanese keyboards could be reduced. From the viewpoint of curriculum development for English courses, a basic writing class should be offered as early as possible as in the USA or in other English speaking countries, since writing with computer skills cannot be neglected in learning English literacy in this modern time.

The limitation of this research was that with a limited knowledge of corpus linguistics, researchers found it difficult to sort out parts of speech and categorize the extracted words into function and content words as a sole English word cannot be judged its part of speech. For future research, it is necessary to utilize a more sophisticated concordancer which has multiple functions analyzing parts of speech or word levels, etc., as suggested by Yoshida ⁷⁾.

To conclude this research, as Tohno ¹⁷⁾ claims, Japanese Learners' Corpus turned out to be small as it is the product of foreign language learners, yet it revealed so many suggestions for English teachers to recognize learners' acquisition of English as a foreign language as well as their process of learning.

References

- 1) Maher, J. (1986): The development of English as an international language of medicine, *Applied Linguistics*, 7 (2) : 206-219
- 2) 渡邊容子(1998) : 臨床看護婦の英語の必要分析, *The Language Teacher*, 22 : 29-37
- 3) 渡邊容子, 林陸朗, 下村洋之助(2001) : 病歴総括に見る英語の専門用語分析, 群馬県立医療短期大学紀要 8 : 97-107

- 4) Anthony, L. (2005): www.antlab.sci.waseda.ac.jp
- 5) Richards, J. and Schmidt, R (2002): *Longman dictionary of language teaching & applied linguistics*, The 3rd ed., 116, London: Pearson Education Ltd.
- 6) 大塚孝信, 中島文雄 (監修) (1982): 新英語学辞典, 262-264, 研究社, 東京
- 7) Yoshida, M. (2001): A survey on vocabulary in the ESP-related reading textbooks for nursing and nutrition majors, 天使大学紀要 2: 103-132
- 8) Yoshida, M. (2003): A survey on vocabulary in the ESP-related reading textbook for nursing majors, *Annual Report of JACET-SIG on ESP*, 5: 31-37
- 9) Watanabe, Y., Uchida, P., Yamamoto, J. (2004): *Health talk: English for hands-on nursing*, Tokyo: Pearson Education Ltd.
- 10) 助川尚子, 両角迪子編 (2004): *Silent partners—nursing episodes—*, 南雲堂, 東京
- 11) Nishimura, T. (2005): A nursing English education program as the first stage of ESP, *Annual Report of JACET-SIG on ESP*, 7: 22-29.
- 12) 投野由紀夫 (1998): 学習者コーパスと英語指導 (9), 現代英語教育 35 (9): 30-32
- 13) Swales, J. (1998): *Genre analysis English in academic and research settings*, 23-4, Cambridge: Cambridge University Press
- 14) Swales, J. (2004): *Research genres: exploration and applications*, 60-68, Cambridge: Cambridge University Press
- 15) Sinclair, J. (1991): *Corpus, concordance, collocation*, Oxford: Oxford University Press
- 16) Leech, G. (1991): *The linguistic encyclopedia*, edited by Malmkjar, K., 73-80, London: Routledge
- 17) 投野由紀夫 (1999): 学習者コーパスと英語指導 (12), 現代英語教育 35 (12): 78-80

看護学生の英単語習得に関するコーパス基礎研究

渡邊容子, 鶴生川恵美子, アレキサンダー・フォン・アルテンシュタット
群馬県立県民健康科学大学

目的:本研究は、医療系大学看護学専攻学生の専門英単語の習得度とその特徴を調査することであり、2冊の英語教科書と「1学期間で英語 I から学んだ事」に関する学生のエッセイに使われた語彙数の比較データを基に実施した。

方法:コーパス言語学に基づき、コンコーダンスープログラムを用い、電子化された2冊の英語教科書と70名の学生エッセイから各語彙分析表を検出し、この語彙頻度を伴って現れる3つのコーパスを内容語・機能語・看護医療系語彙の観点から分析した。

結果:学生は2冊の教科書から看護医療系語彙の54%を使用し、会話用教科書の語彙数より読解用からの語彙を多く使用した(40%:26%)。語彙の'nurse'と'patient'が内容語分類の看護医療系語彙リストの中で上位3位内の共通語彙として検出された。代名詞、冠詞、前置詞、接続詞が英文構成上最重要で上位10位内から共通に検出された。

結論:本研究から、読解用教科書の方が会話用より学生の習得語彙の種類をより豊かにする可能性があり、これは会話体より多い語彙量を提供する故であると考えられる。語彙習得調査は、教育者に専門語彙教授法の洞察を提供する。

キーワード:コンコーダンスー, コーパス言語学, 機能語, 内容語, 看護医療系語彙, 専門英語 (ESP)