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巻頭言
東日本大震災と医学英語教育

　第3号をここに発行できることを大変喜ばしく思います。去る3月11日に起きた東日本大震災は，国民生活全体に大きく影響を与えました。直接の被害を被った方々と失なわれた命に対して心よりお見舞いと哀悼の意を表します。震災と震災に起因する様々な問題に，医療と医学教育は大きく関わっており，医療系教育の一端を担う本学会と学会誌は震災のconsequenceを受け止め，学会活動に反映させなくてはなりません。

　世界には，医科大学が閉鎖され国内に医師を養成する教育機関が無くなった国があります。また戦争・内紛などで初等中等高等教育が機能しなくなった国もあります。このような国々で，いったん後退あるいは消滅した教育を立て直すのは多大な努力と時間を要します。今回の災害は，日本でもそのような危機が起こりうることを体感しました。社会も，文化も，教育も常に変化し，進化している中でその流れが止まることの怖さを感じます。今回の震災は，被災地だけでなく直接被災しない地域への社会的・経済的影響がありました。教育についても例えば都内で授業開始が遅れた学校もありました。教育の停滞が実際に起きたわけで，世界の科学・技術が日進月歩する中で，教育の中断が長引けば社会に重大な影響を与える危機にありました。

　日本医学英語教育学会は，日本だけでなく英語で医学教育を行わない国など国際的にも意義のある理念に基づき，医学英語教育の進歩を通じて社会に貢献する使命を持ちます。震災直後の混乱の中で，一時は中止が考慮された本年の学術集会は，理事長の強い信念の基に予定通り開催されました。本年から本誌は，年3回発行となり，第2号は学術集会抄録集となり，ここに第3号が予定通り発行されます。小さなことですが教育と研究が停滞することなく前進している誇りをもって，本誌を皆様にお届けします。新しい執行体制となった学会とともに本誌の発展にさらなるご協力をお願いします。

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The Use and Misuse of English Prepositions in Japanese Medical Research Writing

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In this study, we focus on a number of English prepositional errors made by Japanese researchers working in various disciplines related to the life sciences. Through the use of corpora, concordance, and statistical analysis, we provide a sampling of deviant expressions relating to prepositions found in the English abstracts attached to Japanese medical articles published in Japan and compare them with native-speaker norms relevant to this particular field.

Overall, it was found that Japanese learners had little understanding of conventional prepositional usage in academic English as revealed by many instances of erroneous selection and/or omission of prepositions. In particular, learners tended to treat prepositions as interchangeable and had little ability to distinguish one from another or make appropriate selections. In view of this, they appeared to be unaware that the choice of preposition is constrained by the particular sense it contributes to the lexical phrase in which it appears.

From a pedagogical perspective, it is considered necessary for learners to have a clear understanding of the core meanings of prepositions and of how they may be extended to provide a wide range of figurative meanings. This is particularly so in the case of spatial prepositions since they tend to have a high frequency of occurrence and it is therefore important for learners to be able to distinguish their precise meanings in different contexts and apply them correctly in their academic writing.

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1. Introduction

Acquiring proficiency in the use of prepositions in writing is often a very complex task for nonnative learners of English in that preposition selection is generally viewed as irregular and unsystematic. Consequently, learners have to resort to memorizing prepositions in their various patterns of use with little understanding of their particular semantic role in discourse. Such an approach, however, involves considerable effort on the part of learn-ers in terms of storage and retrieval of information and they may ultimately remain unaware of the range of meanings expressed by a particular preposition and of its specific contribution to the understanding of text. In this regard, the definitions and explanations given in dictionaries are not of much help and sometimes seem only to confuse learners. In particular, definitional shortcomings include disorganized scattering of semantic information, unclear presentation of sense information, lack of information on semantic contrasts, and omitted usages.[1-4] Learners therefore encounter many problems in choosing the correct preposition in a given context, and improper use of prepositions has been found to account for a substantial proportion of all their second language writing errors.[5]

Prepositions have an important role in identifying and linking semantic relations within a sentence (i.e., between a governing verb and its complement). While they may be classified as a closed class, dealing with a limited number of concepts such as spatial and temporal rela-

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tions, they are not entirely stable. This is because their semantics have tended to change over the course of time and new meanings have emerged. They are therefore in a state of flux and in some ways similar to more open-class categories such as verbs, nouns, and adjectives that are constantly evolving in line with the need to express new concepts. They remain, however, a relatively small group although many of them have more than one sense and some may belong to more than one grammatical category. There is therefore a certain degree of overlap with other parts of speech. As for their distribution in text, it has been found that nine of the 25 most frequent words in the English language are prepositions (The British National Corpus),[6] each associated with a number of different senses (The New Oxford English Dictionary).[7] In view of the frequency and polysemous nature of prepositions, it is necessary for learners to be aware of their various senses and sub-senses since accuracy in their use is essential for clear and effective communication.

2. Core Meanings of Spatial Prepositions

In the case of spatial prepositions, where either location (e.g., *on* the table) or direction (e.g., *to* the station) is indicated, these should not pose any serious difficulty for nonnative learners of English in that they convey specific, literal meanings that are simply represented by the insertion of the relevant preposition in its basic core meaning. In such cases, the preposition is selected depending on the particular spatial relation that one wants to express and a number of different prepositions may be substituted accordingly. The resulting differences in interpretation may therefore be attributed to the specific differences in meaning conveyed by the particular spatial preposition. However, in the absence of a clear spatial orientation, the choice of spatial preposition often seems rather arbitrary and is a source of consternation among learners who are compelled to memorize which preposition appears in a particular context as part of a word-string and without any appreciation of its particular nuances. They treat such non-literal prepositions as if they were lexically empty and devoid of meaning. As such, prepositions that are seen to be offering no information on textual meaning relating to location or direction might be viewed as redundant. Learners therefore tend to either choose the wrong preposition, insert a redundant preposition, or omit a required preposition altogether,[8-10] which may then serve to distract the attention of the reader/listener from the content of a particu-

lar text and make it less effective.

In this regard, research in the field of cognitive science has revealed that prepositions have the potential to affect how meaning is construed.[11-16] This can be readily observed in cases where different prepositions appearing in exactly the same context may create markedly different images and subtly influence how a text is interpreted. Rather than considering prepositions as grammatical elements lacking in semantic content and characterized by unpredictable distribution, learners should realize that they have substantial information content and contribute greatly to the construction of meaning in text.

2.1. Preposition selection

Japanese learners of English are known to have considerable problems with English prepositions.[17,18] Even among advanced learners who have sufficient grammatical competence to produce a research paper in English, it is not unusual for errors to be found in their writing that arise from their failure to properly discriminate between prepositions and use them appropriately. This may also be due to negative transfer from their native language where there are far fewer post-positional particles (11) when compared with the number of English prepositions (over 50). For example, it is hard for learners to choose between the English prepositions *at*, *on*, and *in* since in Japanese the temporal/locative particle *ni* (and to a certain extent *de*) is predominantly used to convey these concepts. Thus, in most cases, these three prepositions in English may be expressed by a single particle in Japanese. Furthermore, with regard to the Japanese particle *no*, although it overlaps in some ways with the English possessive preposition *of*, it is not equivalent. In fact, it has a number of additional meanings and functions that do not correspond precisely. This is illustrated in **Table 1**.

These wide-ranging meanings of the particle *no* in Japanese are expressed using different prepositions in English, such as *from* (origin), *for* (purpose), and *in*, *on*, *at* (location), so that it expresses an associative relation that has a broader application than the English possessive preposition *of*. This can then lead to inappropriate translations and selection errors on the part of learners when producing English sentences. It is therefore important to point out to learners how certain non-possessive meanings(origin, purpose, location), which are conveyed by the particle *no* in Japanese, are encoded differently in English.

Furthermore, owing to the small number of particles

Table 1. Japanese particle '*no*' vs. English prepositions

Japanese	English
1　肺がんの患者(*haigan **no** kanja*)	a patient **with** lung cancer
2　腹痛の薬(*fukutsu **no** kusuri*)	medicine **for** a stomachache
3　年齢の差異(*nenrei **no** sai*)	a difference **in** age
4　血圧の変化(*ketsuatsu **no** henka*)	changes **in** blood pressure
5　ウサギの実験(*usagi **no** jikken*)	an experiment **on** rabbits
6　新薬の実験(*shinyaku **no** jikken*)	an experiment **with** new drugs
7　化学の実験(*kagaku **no** jikken*)	an experiment **in** chemistry
8　終末期の患者(*shumatsuki **no** kanja*)	patients **at** the end of life
9　精神医学の本(*seishin igaku **no** hon*)	a book **on** psychiatry
10　ラバとロバの違い(*raba to roba **no** chigai*)	the difference **between** a mule and a donkey
11　肝移植手術の理由(*kanishoku shujutsu **no** riyuu*)	a reason **for** liver transplantation
12　鳥インフルエンザの懸念(*tori infuruenza **no** kenen*)	concerns **about** avian flu
13　地球温暖化の解決策(*chikyuu ondanka **no** kaiketsusaku*)	solutions **to** global warming
14　ダイアナ妃の死因の調査(*Diana hi no shiin **no** chosa*)	an investigation **into** the death of Princess Diana
15　成功の秘訣(*seikou **no** hiketsu*)	the key **to** success

in Japanese, spatial and directional concepts are frequently articulated through the use of spatial nouns. For example, there is no lexical equivalent for the English preposition *up* in Japanese, where the spatial noun *ue* is used to convey the same meaning in combination with the locative particle *ni* and the associative particle *no* (i.e., 〜 *no ue ni* = on top of). The same kind of pattern applies to *in* (*naka*), *down* (*shita*), *before* (*mae*), *after* (*ato*), and so forth.

In view of this, it may be difficult for teachers to explain how the prepositions are chosen in the following sentences, which makes it very hard for learners to distinguish their uses.

(a) We went to Tokyo *in* my father's car.
　　(*We went to Tokyo *by* my father's car.)
(b) We went skiing *in* Nagano.
　　(*We went skiing *to* Nagano.)
(c) We visited Tom *on* the morning of December 1st.
　　(*We visited Tom *in* the morning of December 1st.)

In each of the above sample sentences, learners tend to favor particular prepositions over the correct ones. For example, they may wonder why they cannot say "We went to Tokyo *by* my father's car," whereas "We went to Tokyo *by* car" is accepted. In the same way, learners may assume that "We went skiing *to* Nagano" and "We visited Tom *in* the morning of December 1st" are perfectly natural English sentences. There appears to be no effective way for them to learn how to properly use English prepositions.

In fact, with regard to example (a), the preposition *by* is used for generic means of transportation (a car) to express *by means of*. It is therefore purely instrumental. However, when more specific information is provided (my father's car), the preposition *in* is used. It conveys a further sense of containment within an object and therefore depicts more than the simple means or result of *by*.

In example (b), the preposition *to* merely indicates the movement from one point to another with the city of Nagano as the final destination. On the other hand, the use of the preposition *in* shifts the focus from the journey to Nagano to the activity of skiing that took place there. It therefore expresses the notion of action occurring within a certain location.

In example (c), the preposition *in* is used for temporal units that are of relatively long duration (month, season, year), whereas the preposition *on* is used with less extensive time periods (weekdays, dates). Longer units of time are viewed as an enclosed space within which some activity may occur. It therefore has a containment function (three-dimensional). In this case, however, the preposition *on* is used to describe an action that occurred at a specific time (two-dimensional) rather than an activity that took place within a particular time frame. While it is possible to say '*in* the morning,' this would refer to a period of time during the day rather than a specific point in time, as is the case with '*on* the morning of December 1st.'

Even a simple-looking English verb such as *die* can cause serious problems for learners. If they are asked to fill in the blanks in the following sentences, they may feel

at a loss because they cannot count on their grammatical competence when it comes to choosing an appropriate English preposition from among many.

His first child died (*at*) birth.

He died (*at*) the hands of a murderer.

He died (*by*) drowning.

He died (*for*) his faith.

Hundreds died (*for*) want of food.

He died (*from*) an unknown cause.

Dozens of people died (*in*) the accident.

He died (*of*) lung cancer.

He died (*on*) the spot.

He died (*through*) neglect

He died (*under*) the (surgeon's) knife.

He died (*on*) the morning of August 10th, 2001.

These sentences were used on a number of Japanese medical university students (86 subjects) as an informal test of their knowledge of prepositions. Results revealed an average score of 33% in relation to correct prepositional choice. This comparatively low success rate clearly illustrates the problems that Japanese learners of English have in using prepositions. The students fared no better when confronted with a short reading passage in which a number of prepositions had been deleted. They again experienced difficulties in supplying the appropriate preposition in each case, achieving an average score of only 32.5%.

But here it gets complicated. Does higher testosterone produce more aggressive behavior? Or does the more aggressive male—whose aggression was learned, say, (1) home or (2) school or (3) the neighborhood or (4) the team or (5) the culture (6) large—call (7) a release (8) testosterone (9) within himself (10) assistance?

(*Time*, April 24, 2000)

As the above examples show, even though native speakers of English can instantly distinguish a correct preposition from an incorrect one, learners of English, including those in Japan, have to ponder for a while before deciding which preposition should be used and then may still fail to choose the appropriate one.

3. Corpus Evidence

In this section, we focus on a number of English prepositional errors produced by Japanese researchers working in disciplines related to the life sciences. Through the use of corpora, concordance, and statistical analysis, we provide a sampling of deviant expressions relating to prepositions found in the English abstracts attached to Japanese medical articles published in Japan (with the main body written in Japanese) and compare them with native-speaker norms relevant to this particular field. The reason for examining the English abstracts in journals published in Japanese was that the English used in those abstracts was considered less likely to have been rigorously reviewed, corrected or revised by native speakers of English. Such abstracts may therefore more closely reflect the Japanese writer's actual level of English compared to an article in an international journal where the English has been edited and modified during the screening process.

To collect English abstracts written by Japanese researchers, we accessed PubMed[19] (a free digital archive of biomedical and life sciences journal literature developed and managed by the National Center for Biotechnology Information at the US National Library of Medicine) on the Internet, and the retrieval system enabled us to compile a corpus consisting of some 56,000 English abstracts. This corpus (J-Corpus) contains over 11 million running words. For comparative analysis, we consulted the Life Science Dictionary Project Corpus (LSD Corpus),[20] a collection of about 303,000 abstracts accompanying English academic research papers from approximately 30 distinguished life-science related journals around the world. The LSD Corpus currently contains over 60 million running words (**Table 2**). This corpus was felt to be a valid source of authentic English materials since it is almost entirely composed of English abstracts written by native speakers of English, and also because the articles and abstracts found in such eminent journals as *Nature* and *Science* are known to undergo a strict review prior to publication. To adjust for the size difference/imbalance between the LSD Corpus and J-Corpus, the LSDmini Corpus, which is one-sixth the size of the original LSD Corpus, was used when desirable for statistical comparative analysis.

3.1. Corpus data: *Die*

The following chart (**Figure 1**) shows instances of erroneous prepositional choice found in the J-Corpus. The writers may have assumed that the expression *died for* is acceptable in each context because the preposition *for* can be used when referring to a *reason* or *cause*. Native speakers of English, however, would have automatically chosen *died of* or *died from*. This is a good example of how a seemingly logical approach based on Japanese expressions and dictionary explanations fails to

Table 2. Overview of the LSD Corpus and J-Corpus

Corpus Name	Abstracts	Token	Type
LSD Corpus (English as the first language)	303,014	61,290,263	324,783
LSDmini Corpus		11,120,652	150,178
J-Corpus (English as a second or foreign language)	55,973	11,120,553	96,266

LSD: Life Science Dictionary Project

LSDmini: approximately one sixth of the LSD Corpus

J: Japanese

Token: the total number of words

Type: the number of different words

Table 3. Prepositions immediately after *die*

J-Corpus 3,165 instances		LSD Corpus 2,251 instances	
of	1192	of	223
within	182	in	149
from	180	at	135
in	161	from	118
due	106	during	105
at	97	by	104
on	91	within	102
during	75	after	67
after	61	before	50
with	35	within	46
because	29	between	33
by	21	on	15

Figure 1. Excerpt from concordance for *die for*

1 ...	all, two patients died of disease, one	died for	other cause, one surviving witho	...
2 ...	th stable disease and the other patient	died for	progression of the disease.	...
3 ...	2) 15 and 11 patients	died for	cardiac and non-cardiac events,	...
4 ...	9), 2 patients are alive and 8 patients	died for	progressive disease.	...
5 ...	Ten days later, however, she	died for	intestinal hemorrhage followed b	...

help Japanese learners of English when it comes to proper prepositional choice. When encountering the expression "two patients died of disease, one died for other cause," native speakers of English might wrongly assume that one patient opted to die because of his faith (rather than from a medical cause) if the full context of the sentence is missing.

The statistical evidence (**Table 3**) shows that native speakers tend to use *die of* when referring to the cause of death such as cancer, with *die from* as a second choice. Conversely, Japanese learners of English are tempted to use a variety of linguistic forms in referring to the cause of death, resulting in the unusually high frequency of *die due to*, *die because of*, or *die for/by*, all of which are rarely, if at all, found in the LSD corpus and are regarded as deviant. They could have avoided using such erroneous expressions if they had been aware of the simple fact that *die* followed by *of* is the preferred combination when referring to the cause of death from illness or disease.

According to the British National Corpus,[6] the preposition *of* is the third most frequent word in the English language. It has largely lost its original spatial designation suggesting *separation from* or *deriving from*. It is therefore considered to be non-spatial and abstract, merely acting as a conceptual link between two nouns and not contributing any further semantic content. As such, in its ordinary application, it does not entail movement or change. In this case, however, the preposition *of* retains its original (now archaic) sense of *deriving from* and clearly establishes that disease or illness was the agent of change resulting in death. It therefore defines the source whereby a particular medical condition is seen as the starting point in a process leading to the death of a patient.

When the connection between a preposition and its accompanying words is not so strong, compared to phrasal expressions such as *take care of* and *by virtue of*, learners cannot turn to dictionaries for help since they are likely to be confronted with long undifferentiated lists of prepositions that are based on frequency and offer learners little help in making an appropriate choice. This then leaves learners frustrated and susceptible to making wrong prepositional choices on account of their inability to distinguish subtle differences among prepositions that share a similar meaning. This has led learners to depend on their own intuition, which is strongly affected by their native language and often gives rise to incorrect prepositional usages.

Figure 2. Excerpt from concordance for *discuss about*

...	In this study, we	discuss about	the indications of simultan	...
...	nodules by electronmicroscopy, when we	discuss about	the similarities between ex	...
...	We review previous reports and	discuss about	the treatment of IHD in dia	...
...	re and function of these molecules, and	discuss about	their physiological roles i	...
...	ation of cancer predisposition and will	discuss about	various problems of predict	...
...	We also	discussed about	a new concept, CARS (comp	...
...	We	discussed about	diagnosis and treatment o	...
...	We	discussed about	diagnostic accuracy of in	...
...	ough 1989, and 29 patients of them were	discussed about	efficacy of MRI in treatm	...
...	We	discussed about	her pathology, diagnosis,	...

Figure 3. Excerpt from concordance for *discuss on*

...	In the present report, I	discussed on	the contribution of neuro-va	...
...	RDAs of other fat-soluble vitamins were	discussed on	the differences between Japa	...
...	ntagonists (Angiotensin antagonists are	discussed on	the efficacy and safety in t	...
...	dy of circadian rhythm are reviewed and	discussed on	the following topics: its ph	...
...	Many authors have	discussed on	the instability of the ankle	...
...	We	discussed on	the long-term anterior chest	...
...	owing erythrocytosis are introduced and	discussed on	the mechanism of Ep producti	...
...	iated with cerebral infarction and have	discussed on	the mechanisms.	...
...	We	discussed on	the possibility that the PAI	...
...	From these data, we	discussed on	the possible mechanism of th	...

3.2. Corpus data: *Discuss*

Among the common errors made by Japanese learners of English, *discuss about* is one of the most prevalent. Sifting through the J-Corpus reveals a surprising number of sentences that include this particular erroneous expression (**Figure 2**).

In this case, the errors may be attributed to the learners themselves in that if they were fully aware of the difference between a transitive verb and intransitive verb they would be less likely to produce these kinds of grammatically deviant expressions. They should have learned that a transitive verb is accompanied by a direct object and that a preposition is not required. However, inadvertent errors are known to occur among even advanced learners of English with an excellent command of English grammar when they are influenced by Japanese expressions. In this respect, they may also be misled by the use of the alternative expression "have a discussion *about*," which is a legitimate combination in English. Learners should be careful to distinguish between these two verbal forms.

The statistical evidence (**Table 4**) that *discuss about* appears almost as frequently as *discuss on* (**Figure 3**) in the J-Corpus is quite intriguing since this indicates that

Table 4. Positional frequency for *discuss*

J-Corpus = 2,624 1st right		LSDmini = 1,391 1st right	
in	294	in	193
with	56	with	34
from	54	as	10
on	43	by	5
about	39	along	4
by	27	within	4
as	26	from	2
for	13	to	2
at	6	for	2

learners are not sure of the distinct difference between these two prepositions, both of which can be translated into one Japanese expression (*ni tsuite* 〜について), which tends to confuse learners and leads them to assume the two prepositions are interchangeable.

What learners should notice is that in the LSD Corpus, the preposition *in* is almost exclusively used immediately after *discuss* and a closer look at the concordances and statistical data demonstrates that *discuss in terms of* is the most commonly used expression followed by *in the context of* and *in relation to*. With regard to *discuss*, therefore, it would seem that such expressions as *in terms of*, *in the*

Figure 4. Excerpt from concordance for *study about* (verb)

...	And they	studied about	the effects of supportive g	...
...	velocimetry method (the LDV method) to	study about	the tissue locus where its fl	...
...	We	studied about	histopathological changes i	...
...	We	studied about	influence of alcohol prefer	...
...	We	studied about	the effects of glucose and	...
...	We	studied about	the histological findings o	...
...	In the first experiment, we	studied about	excimer laser ablative effe	...
...	Furthermore, we	studied about	loss of 22 q in 5meningiom	...
...	Moreover, we	studied about	gamma delta (gamma delta) T	...
...	In this study, we	studied about	the possibility of TNF-alph	...

context of, and *in relation to* are conventionally used by native speakers in writing academic papers. The tendency for learners, however, is to try and produce a sentence almost from scratch by resorting to their grammatical knowledge and incorporating superficially similar patterns such as *from the viewpoint of* (rather than *in terms of*) with which they are already familiar. Such collocationally inappropriate formulations are a result of negative transfer from their first language whereby certain common Japanese forms of expression are mistakenly considered to be equivalent to the correct English expressions and are used persistently by learners in their academic writing.

3.3. Corpus data: *Study*

Rules of grammar do not help and may even serve to confuse learners when a verb can be used both transitively and intransitively. The verb *study* is such a case. It is not surprising, therefore, that learners have difficulty in using this particular verb. Some learners tend to assume the verb *study* should be used as an intransitive verb and thereby choose to insert a preposition between the verb and following direct object (e.g., They studied *about* medicine). Grammatically speaking, the sentences in **Figure 4** are not regarded as deviant, but in fact there are no instances found in the LSD Corpus of *study* used as an intransitive verb with a preposition inserted before an object. In this regard, it should be noted that in its transitive use, there is a direct link with the object of the verb *study* so that attention is firmly focused on the object of the verb with no intervening preposition to dilute this direct relationship. Conversely, when used intransitively together with the preposition *about*, this suggests a lesser degree of concentration so that attention is more dispersed around the object of study. There is therefore a difference in the degree of intensity between the transitive and intransitive uses of the verb *study*. In academic research, the focus of investigation should be clearly defined in order to draw clear implications from the resulting data. When writing a research paper, the learner should bear this in mind in order to conform to academic conventions.

This example shows that dictionaries do not always help learners to produce formal academic sentences in that these reference books try to include each and every expression listed mainly in terms of frequency, even if an expression can be regarded as only very marginal or restricted to a certain register. They therefore do not always help learners to discriminate between different prepositional uses in certain contexts or to make an appropriate choice.

When *study* is used as a noun, the problem arises of deciding which preposition should be used immediately after it, *about* or *on* (besides *of*). When using these two prepositions in the sense of *concerning* or *pertaining to*, most learners consider there is no distinct difference between them and thus tend to assume they are interchangeable. The source of complication may stem from the Japanese translation, which uses a single expression (*ni tsuite* 〜について) and therefore makes no distinction between the English prepositions *about* and *on*. Generally, learners have not acquired the ability to differentiate one from the other. They can be taught in what way these two prepositions differ from each other, but there still remains the problem of which words tend to collocate with *on* or *about*. There seems to be no clear-cut explanation for choosing either one of them.

The statistical analysis of the J-Corpus shows that there are many sentences in which *about* is used immediately after *study* (**Figure 5**). The number of such instances is 60, compared with only two instances in the LSDmini corpus, whereas *on* is found to occur quite fre-

Figure 5. Excerpt from concordance for *study about* (noun)

...		Studies about	the function of mucin molec	...
...	A	study about	the desensitization therapy c	...
...	We have conducted a series of basic	studies about	Centocor's CA125 RIA Kit, e	...
...	The clinical	studies about	the electrolyte abnormality	...
...	tion, this study suggests that a cohort	study about	the progress of arteriosclero	...
...	rate in mice, and added the comparative	studies about	the timing of blood transfu	...
...	(PURPOSE): A comparative	study about	the contractility of the exte	...
...	l 320 were compared in a prospective CT	study about	their imaging quality.	...
...	Therefore we have done epidemiological	studies about	MRSA isolated from medical	...
...	An extensive	study about	the character of circulating	...
...	authors, however, there are rather few	studies about	the association of pulmonar	...
...	Further	study about	absorption and outflow resist	...

Figure 6. Excerpt from concordance for *report* (verb)

...	In 1980, Fukuhara et al. have	reported	two patients with "myoclonus epi	...
...	In contrast, we here	report	a patient with ASN, in whom result	...
...	We here	report	fourteen patients diagnosed as adu	...
...	We here	report	two patients with T-cell LPD invol	...
...	We herein	report	a patient with mesangioproliferati	...
...	We herein	report	a patient with small-cell carcinom	...
...	We herein	report	two patients with neurosarcoidosis	...
...	We now	report	a patient with slowly progressive	...
...	2 (Glu12 [GAA] to Ter [TAA]) and Rajan	reported	3 patients with bioinactive TSH	...
...	Dacou-Voutetakis	reported	3 patients with a nonsense mutat	...
...	We	report	12 patients who ate raw firefly sq	...
...	We	report	2 patients with Bird breeder's lun	...
...	We	report	27 patients with ACC treated at th	...
...	We	report	3 patients for whom HPN was introd	...
...	We	report	4 patients, 1 female and 3 males a	...

quently (332 times) after *study* in the LSD-Corpus.

3.4. Corpus data: *Report*

The verb *report* presents a similar problem to the verb *study* in that it can be used either transitively or intransitively and may also be used as a noun. In the J-Corpus, there are more than 100 instances where *report a patient* is used (**Figure 6**), whereas none are found in the LSD Corpus. In these cases, the preposition *on* should be inserted immediately after *report* in order to avoid any misunderstanding. In this regard, when used intransitively, as in *report on a patient*, it is the medical condition that is the object of attention and it is only this particular aspect of the person that is being described. In its transitive use, however, as in *report a patient* to the authorities, this suggests that it is the person who is being reported and for reasons that are not necessarily medical. The omission of the preposition *on* therefore serves to focus attention on the person rather than on the person's medical condition.

However, as in the case of *study*, the preposition *about* appears in as many as 90 instances in the J-Corpus (**Figure 7**). The difficulty in discriminating between *on* and *about* appears to result in a substantial number of deviant expressions.

In this regard, the preposition *on* expresses a greater degree of formality and therefore tends to appear frequently with research-related terms such as *study* and *report*. It also suggests a more focused quality where attention is placed on the object of discussion in a serious and deliberate manner.[21] Conversely, the preposition *about* suggests more informal and casual communication where attention is not so focused and is rather more dispersed.[22]

Figure 7. Excerpt from concordance for *report* (noun)

...	Many	reports about	the increase of renal cell	...
...	Although there are many	reports about	CCD and CCA following cereb	...
...	There are many	reports about	the effect of age on P300 i	...
...	PURPOSE: There are many	reports about	the usefulness of transrect	...
...	There have been many	reports about	intracellular signaling pat	...
...	Compared to many	reports about	specimens obtained during s	...
...	The linkage between newspaper	reports about	teenage suicides and these	...
...	Significant linkage between newspaper	reports about	teenage suicides and trend	...
...	There has been no	report about	the incidence of craniolacun	...
...	kine-generating tumors, but there is no	report about	cytokine generation in PMFH.	...
...	Although there are no	reports about	gene therapies for human au	...
...	or subacute phases, there have been no	reports about	the angiographic features.	...
...	ning pituitary adenomas and there is no	reports about	its histopathological chang	...
...	Numerous	reports about	the androgen receptor (AR)	...
...	ical studies, and there are a number of	reports about	such measurements.	

Figure 8. Excerpt from concordance for *role on*

1 ...	low activity of suppressor T cell had a	role on	antibody production, including th	...
2 ...	in tumor cells are considered to play a	role on	the homologous deletion of cancer	...
3 ...	uggested cerebellar hemisphere played a	role on	the order and timing of rule-base	...
4 ...	uscles might suggest that Bcl-2 plays a	role on	surviving muscle fibers.	...
5 ...	not the local IgA immune system plays a	role on	the pathogenesis of IgA nephropat	...
:				
71 ...	with sinobronchiectasis might play some	role on	break down of sino-bronchial synd	...
72 ...	on of cerebrospinal fluid may play some	role on	the development of pseudotumor ce	...
73 ...	e aim of this study is to elucidate the	role on	the sympathoadrenal medullary sys	...
74 ...	therapy but not well known to play the	role on	the airway inflammatory cells.	...
75 ...	growth factor (IGF), and discuss their	roles on	regulation of renal function and	...

This is in line with cognitive theory whereby *on* represents direct contact with its object (focused attention) while *about* has no direct contact with its object (unfocused attention). As such, *on* is far more emphatic in marking its direct relation to the topic than *about*, which suggests a looser and more tenuous relationship. Here, it is possible to imagine the speaker at times going *off* the topic (losing contact) by perhaps introducing extraneous information that may be considered only marginally relevant. These kinds of key aspects remain largely unknown to learners, thereby resulting in the overuse of *about* when *on* is the proper choice.

3.5. Corpus data: *Role*

The simple translation from a seemingly equivalent Japanese expression may also play a part in the overproduction of *role on*, amounting to 66 instances in the J-Corpus (**Figure 8**), while only eight instances were found in the LSDmini Corpus. Even though the first choice should be *in*, the expression *role on* can be translated into natural sounding Japanese (*ni okeru yakuwari* 〜における役割), which may be the underlying reason for the prevalence of this word pattern.

In this case, the semantics of the preposition *in* would suggest playing a part in a collective enterprise such as a performance in a theater. In other words, although you are *on* a stage, you are acting within the confines of the performance together with all the other actors in the cast. The preposition *in* therefore suggests that the action you perform is only a part of all the various activities contained within the entire production.

3.6. Corpus data: *Change*

The strong preference for the preposition *of* on the part of Japanese learners of English may also be the result of negative transfer from their native language

Figure 9. Excerpt from concordance for *change of*

309 ...	ships between the number of RBC and the	change of	blood sugar, and between the nu	...
311 ...	, and between the number of WBC and the	change of	CaO2 value.	...
313 ...	oncentration in spite of no significant	change of	coronary blood flow and the car	...
322 ...	Percent	change of	mean blood pressure was signifi	...
327 ...	otal volume of insufflated CO2 gas, and	change of	peak inspiratory pressure.	...
333 ...	little work has been done to study the	change of	spinal cord blood flow (SCBF) i	...
334 ...	ions of the subdural hematomas with the	change of	the density from high to mixed.	...

(**Figure 9**). In the LSD Corpus, the most frequently occurring preposition immediately after the noun *change* is the preposition *in*, while in the J-Corpus, the preposition *of* is used disproportionately frequently (**Table 5**). Grammatically speaking, using *of* should not be considered wrong and in some cases such as *change of trains/clothes/pace*, the preposition *of* is the right choice, but the clear preference for using *change in* rather than *change of* should be borne in mind and followed, which may then help learners to produce more natural-sounding sentences in English.

From a semantic perspective, a change *in* temperature reflects fluctuations within a range of temperatures. It suggests a degree of change within certain boundaries, a process rather than an event. Conversely, a change *of* temperature suggests a complete transformation from one state to another, an event rather than a process. The use of *in* therefore suggests a change within a system or entity containing various units, whereas using *of* suggests the overall change affecting an entire system or entity. In this view, a change *in* attitude would indicate a change within a number of attitudes held by a certain person, while a change *of* heart/mind indicates an overall change affecting a person. This is why we say, for example, *a change in Susan* and not **a change of Susan* since it is a matter of degrees of change within a person (*change in*) rather than a total change or replacement (*change of*).

3.7. Corpus data: *Increase / Decrease*

The strong attachment to *of* on the part of learners is also manifest in the case of *increase* and *decrease* (**Tables 6 & 7**). These two nouns follow the same pattern that applies to *change*, whereby the use of *in* denotes degrees of *increase* or *decrease* within a certain range. It therefore indicates fluctuations along a sliding scale. Conversely, inserting *of* here would tend to indicate the final outcome affecting the total entity rather than the variations occurring within it (**Figures 10 & 11**). The amount of increase/decrease is therefore a known quantity and can

Table 5. Prepositions immediately after *change*

1st right	LSDmini Corpus	J-Corpus
in	5,719	5,375
of	309	2,688

Table 6. Prepositions immediately after *increase*

1st right	LSDmini Corpus	J-Corpus
in	7,548	6,681
of	363	2,362

Table 7. Prepositions immediately after *decrease*

1st right	LSDmini Corpus	J-Corpus
in	2,828	4,073
of	178	1,365

Table 8. Prepositions immediately after *improvement*

1st right	LSDmini Corpus	J-Corpus
in	451	651
of	60	1,148

be identified as such. It is not concerned with movement or progression.

3.8. Corpus data: *Improvement*

The same applies in the case of *improvement in/of* where the use of *in* would indicate degrees of improvement within a system or entity along a continuum whereas using *of* suggests its overall improvement, a finished product rather than a process (**Table 8, Figure 12**). Similar to, but in marked contrast to the cases shown in *change*, *increase*, and *decrease*, the unusually high frequency of *improvement of* (used twice as often as *improvement in*) should be taken as a warning sign on the part of Japanese learners. In the LSDmini Corpus, *of* is used only one-seventh as often as *in*.

4. Conclusion

Prepositions are considered a problem area in lan-

Figure 10. Excerpt from concordance for *increase of*

301 ...	This	increase of	action potential on the dislo	...
302 ...	e, of which the value corresponded with	increase of	anti-nuclear antibody titer i	...
303 ...	ve been living near major roadways, the	increase of	automobile exhaust due to hea	...
304 ...	of these results we concluded that the	increase of	birth weight in this clinic u	...
305 ...	ed in one or both sexes: suppression in	increase of	body weight, increases in dru	...
306 ...	uterine sensitivity to OT is due to the	increase of	both binding affinity and cap	...
307 ...	These data indicate that an	increase of	Ca2+ in cytosol is important	...
308 ...	than PKC which are associated with the	increase of	Ca2+ in the cells.	...
309 ...	c vasodilation and lack of compensatory	increase of	cardiac output and vascular r	...
310 ...	ble lesions detected by mammography, an	increase of	cases difficult to diagnose h	...
311 ...	We also found an	increase of	cellular plasma membrane pote	...
312 ...	Our results suggest that a slight	increase of	concentration of sIL2R is rel	...

Figure 11. Excerpt from concordance for *decrease of*

304 ...	and HPC attenders exhibited significant	decrease of	blood pressure.	...
305 ...	e ethionine treated rats suppressed the	decrease of	both enzyme activities induce	...
306 ...	250 (3-30 micrograms/kg, i.v.) caused a	decrease of	carotid blood flow, a transie	...
307 ...	roup C was maximal four weeks after the	decrease of	cartilage thickness.	...
308 ...	5FU brought temporary	decrease of	cells in S phase.	...
309 ...	e recovery of cardiac pump function and	decrease of	CPK-MB were superior in MgKCP	...
310 ...	y decreased, while MTBEP suppressed the	decrease of	dissolving effect on wet ston	...
311 ...	was started postoperatively and marked	decrease of	enhanced area was observed in	...
312 ...	transient increase followed by a slight	decrease of	femoral blood flow in anesthe	...
313 ...	ith Hp, neither the increase of FHb nor	decrease of	FHp were recognized.	...
314 ...	s, such a slight decrease of RBC count,	decrease of	granulocyte count and elevati	...
315 ...	Simultaneous	decrease of	HFR, MFR and other blood cell	...

Figure 12. Excerpt from concordance for *improvement of*

1430 ...	If prompt	improvement of	consciousness is not detec	...
1431 ...	drainage alone was performed and prompt	improvement of	consciousness level was de	...
1432 ...	espiration improved in association with	improvement of	consciousness level.	...
1433 ...	osteroid was administered, resulting in	improvement of	consciousness levels.	...
1434 ...	In conclusion, although the	improvement of	contractility on early sta	...
1435 ...	s was returned to normal range with the	improvement of	control parameters includi	...
1436 ...	It was observed that the	improvement of	cooking equipment enabled	...
1437 ...	The period of time required for the	improvement of	cooperation, and the durab	...
1438 ...	onation seems to have resulted from the	improvement of	coordination, mainly due t	...
1439 ...	Significant	improvement of	corneal epithelial damage	...
1440 ...	after successful PTCA, rW-R foresaw the	improvement of	coronary perfusion and wor	...
1441 ...	(p less than 0.01), which indicated the	improvement of	CPP and the resolution of	...
1442 ...	The neurologic remission with	improvement of	cranial CT findings was ob	...
1443 ...		Improvement of	cranial nerve palsy was ac	...
1444 ...	in II infusion, and this resulted in an	improvement of	creatinine clearance, decr	...

guage learning since they frequently occur in a number of set phrases and multi-word units in which their contribution to the overall meaning is not clear. In such cases, the tendency is to see their use merely as idiomatic and unrelated to their basic meanings. Consequently, learners have focused on memorizing as many of these fixed patterns and phrases as they can with little understanding of how prepositions are used systematically to express certain nuances of meaning. They tend to think that prepositions can be used interchangeably with one preposition able to substitute for another and do not realize that the choice of preposition in a lexical phrase is constrained by the particular sense it contributes to the phrase as a whole.

Learners need to understand that spatial concepts can be extended to provide a wide range of non-spatial meanings. Furthermore, the various meanings associated with spatial particles are connected in a systematic way within a semantic network of distinct but related senses. In other words, the primary spatial sense can be used metaphorically to express the same type of conceptual relationship (such as support or containment) on a more abstract level in non-physical domains. In this respect, it is important for learners to be aware of the core spatial meanings of prepositions and of how they may be extended to form figurative meanings. This is particularly necessary since spatial prepositions tend to have a high frequency of occurrence and it is therefore important for learners to elucidate their precise meanings in different contexts. Learners should therefore be encouraged to focus on what insights they can derive from studying the various basic (physically grounded) and extended senses of particular prepositions so that they can develop a more precise feel for which preposition is appropriate in a given context.

In this respect, the use of language corpora offers a way for learners to explore multiple samples of English prepositional usage based on the evidence of an extensive database. Certainly, computer-assisted concordance techniques may give insights into recurring linguistic patterns, allowing learners to more accurately pinpoint the particular conventions and constraints governing the use of prepositions. Concordance information may also provide learners with the necessary contexts in easily accessible form that they would otherwise encounter only through processing numerous independent texts. As such, this may act as a shortcut and eliminate much of the labor involved in reading diverse natural texts to receive an equivalent amount of exposure.[23,24] By pre-

senting learners with a more economical version of the patterns and collocations they would find in natural text, they have the chance to learn more efficiently and to become more independent learners. Concordances should therefore be considered as a dynamic resource that allows learners to see a certain lexical item exemplified in a number of usage examples thereby providing further insights into the various meanings it may express.

With regard to prepositions, therefore, learners should be encouraged to study the concordance lines and note the types of collocations that appear. The more common patterns and collocations could then be committed to memory and treated simply as contextually determined forms. At the same time, however, a clear understanding of the spatial senses may help to explain why one preposition rather than another is chosen to express a given meaning. Therefore, together with the memorization of prepositional phrases, there should also be some understanding of the reasons for the selection of a particular preposition (why it collocates) and of the particular nuances expressed. In this way, learners are more likely to gain a deeper insight into the semantics of prepositions and become more skilled in using them.[25] Furthermore, through focusing on samples of authentic text, learners may be better able to internalize the patterns of written discourse they find there and apply them to their own academic writing.

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Notes

1. Information on the Life Science Dictionary Project can be obtained at http://lsd.pharm.kyoto-u.ac.jp.

2. Information on MEDLINE can be obtained at http://ncbi.nlm.nih.gov/entrez/query.fcgi?db=PubMed.

3. An asterisk mark (*) signifies an ungrammatical sentence or expression.

Framing Nursing Discourse for English for Specific Purposes Materials' Development: How do nurses actually manage English discourse?

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This paper represents one part of a research project on nursing workplace English discourse undertaken in order to ultimately create more authentic, accurate and useful English for Specific Purposes (ESP) materials for those Japanese nursing students who hope to study or practice abroad in the future. The aim is to discover certain salient points of nursing English discourse management that seem to have been overlooked in existing learning materials and thus could or should be considered when developing new materials.

We will first outline some salient features of existing ESP nursing materials in Japan based upon an analysis of discourse-based texts found in current English nursing ESP materials used in Japan. We will also report the results of interviews with both senior and regular working nurses in four different countries regarding typical discourse patterns found in the workplace, the framework of actual nursing discourse.

Next, we will report upon some notable aspects of nursing discourse collected via field observation undertaken by the researchers at four clinical settings in the U.S., the Philippines, and Singapore, with a particular emphasis upon the participants and their interactions, strategic competence and related features of discourse management, set speech events, and spoken grammar.

Finally, collating the results of both interviews and observations, we will make several suggestions regarding changes and considerations regarding the framing or representation of nursing English discourse that can or should be implemented when designing new nursing ESP materials, with the ultimate goal of better preparing non-English speaking nurses or nursing students for training or practice abroad.

1. Introduction and Background

This research project involved first, an analysis of how nursing spoken discourse is typically presented in English nursing textbooks currently marketed in Japan, followed by interviews with nurses and nursing managers, and finally, observations, of actual nursing discourse in three differing English language workplaces (the U.S., the Philippines, and Singapore) undertaken in order to better ascertain how nursing spoken discourse is actually managed. During observations, special attention was paid to collecting samples of authentic spoken discourse regarding participants, roles, strategic competence, and the organization of set speech events.

The decision to undertake this research within three different countries was based upon the belief that a multipolar approach would help to establish the findings as general or as representative of English as a lingua franca, as opposed to being limited to just one locale or cultural milieu. We feel that this approach is underscored by the fact that some of the researchers' current students choose to further their training or studies elsewhere in Asia, and not necessarily in the English-speaking core

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countries.

To the best of our knowledge, little has been written regarding discourse frameworks for nurses. The most extensive undertaking in observing and recording nurse workplace discourse is Ford's[1] highly detailed corpus-based analysis of the turns involved in hand off (widely known also hand over), the speech event in which nurses finishing a shift pass on information to the nurse taking over the shift. Barrere[2] has analyzed nurse-patient (N-P) discourse in detail, but we are not aware of any detailed studies regarding nurse-nurse (N-N) or nurse-other health professional discourse yet.

Corpus analysis of nursing English has tended to focus on the written language (see Budgell et al[3]) in general and specialist terminology in particular. Strategic competence has been widely discussed in the field of applied linguistics ever since it was famously identified as a major communicative competency by Canale and Swain[4] and subsequently discussed in more depth by Tarone[5], but this seminal research was not directly related to nursing. The nature and prevalence of ellipsis, in speech, particularly in environments where interlocutors share background knowledge, has been widely acknowledged, particularly by McCarthy & Carter[6] and Swan[7], but also has yet, to our knowledge, to appear in any detailed analysis of nursing English. In Japan, Suzuki[8] has extensively researched the role of modality in English nursing discourse but, in utilizing a concordance-based analysis, does not apply the results to larger discourse frames. We could find no examples of applying a spoken corpora of nursing English for ESP pedagogical purposes.

We also take note of Widdowson's[9] criticism of corpus linguistics, in which he argued that, "… (corpus linguistics) cannot account for the complex interplay of linguistic and contextual factors whereby discourse is enacted" (p. 4). For this reason, our research is less concerned with the item-specific focus typical of corpus data than it is with the observation and recognition of more holistic spoken discourse frames.

2. Current Japan-based Nursing ESP Materials Analysis

2.1. Methods

In order to analyze existing ESP nursing materials, four initial inquiries were proposed:

1. How do existing EFL materials for nurses typically frame nursing discourse?

2. Who are the participants in these materials?

3. How are their interactions represented in textbook dialogues? How is discourse typically managed in these materials?

4. What are the most common locales or speech events in which nursing discourse is portrayed in these materials?

In order to generate answers to these questions the researcher analyzed the contents of six current or recent nursing English textbooks aimed at the Japanese market.

2.2. Overview of results

Seven salient features could be gleaned from this analysis of existing Japan-based nursing ESP textbooks:

a. **Gazetteer approach**: The vast majority of textbooks analyzed opted for a type of gazetteer or taxonomical approach to nursing English vocabulary. These were most often a) lists of medical terminology and b) work-related stand-alone phrases considered to be of use, often paired with a Japanese translation. In most cases target items were highlighted in related paragraphs, typically short essays about illnesses, treatments, and public health, or in sample dialogues.

b. **Dominant nurse-patient dialogues**: In most dialogues the participants were nurse-patient. In fact, this constituted over 90% of all dialogues or conversation samples observed. The small remainder included nurse-doctor, nurse-patient's family, nurse-administrator or other health professional. Nurse-nurse interactions were noted in only two cases and only as brief two-turn exchanges at that.

c. **High degree of symmetry**: Since most of the interactions depicted were nurse-patient encounters it is this interaction that informs most of our analysis. We noted that in the materials analyzed patients and nurses initiated a near 50/50 ratio of dialogues. Turns were typically of the same length with neither participant dominant in terms of initiating turns. In short, these dialogues were highly symmetrical.

d. **Formulaic openings and closings**: The vast majority of dialogues and samples contained socially formulaic openers and closers, typically opening with greetings and concluding with an expression of thanks.

e. **Few communication breakdowns**: There were very few examples noted involving communication breakdown, misunderstandings, cases of repair, or other features of discourse that demand strategic competence. The vast majority of dialogues were flawless and felicitous. Negotiation, when noted, typically con-

sisted of elaborations on behalf of the patient making a request to the nurse.

f. **Little or no ellipsis in speech**: Truncated speech grammar, which typically involves a high degree of ellipsis, and/or the use of pragmatic force were extremely rare. Most texts followed a 'full and complete' sentential model.

g. **Unbalanced settings**: Patient bedside settings accounted for just over 50% of all dialogue samples. Operation rooms, clinical outpatient settings, and reception desks accounted for the vast majority of other settings.

2.3. Discussion of current Japan-based ESP nursing materials

The researchers' preliminary investigation indicates that most existing ESP nursing materials are geared towards students and/or practitioners who plan to stay and work in Japan. The rubric is thus typically that of an English speaking nurse tending to the needs of a patient who cannot speak Japanese but can speak English. This means that the needs of Japanese nurses and students who would like to study, research, or practice abroad are not really addressed. Existing ESP materials for nurses in Japan neither accurately nor adequately address these interactions and we therefore recommend that the focus of some teaching/learning materials be adjusted to reflect the type of English nurses might be expected to encounter when studying, training, or practicing in English-speaking work environments.

3. Field Research

3.1. Interviews with nurses

3.1.1. Methods

In order to prepare a framework model of nursing English discourse, six practicing nurses, three senior and three junior, were interviewed. We understood that perspectives expressed during an interview are not always objective or flawless. People are not always objectively cognizant of their speech and interaction habits. Moreover, the possibility of the observer's paradox, in which authenticity might be sacrificed for the sake of meeting the (assumed) needs or desires of the observer/interviewer, must be taken into consideration. Reflection and/or intuition alone are often not reliable indicators of actual language use.

The purpose of conducting these interviews was to help the researchers gain a perspective as to how nurs-

ing discourse is managed at a macro-level. The questions addressed the following topics:

· the types of speech events most common among working nurses
· the typical participants in these speech events
· the expected roles and relations involved in these speech events
· how these events are typically organized (at a practical, non-linguistic level)
· how notes and other forms of transacting information are typically managed in such settings

The nurses interviewed include one senior nurse in Japan (interview conducted in Japanese by both researchers), one senior and one junior nurse in Singapore at the National University Hospital, one senior nurse-educator and one junior nurse at San Carlos University College of Nursing in conjunction with Vicente Sotto Hospital in Cebu, the Philippines (all conducted by Guest), and one senior nurse at Georgetown University Hospital in Washington, D.C. (conducted by Nambu). Although the sample size is not large we believe that this provides for at least a meaningful preliminary perspective and the establishment of a provisional framework for describing nursing discourse.

3.1.2. Interviews with nurses: discussion

One particularly significant finding was that each interviewed nurse stated that most of their verbal interactions took place with nurse-nurse as participants. When queried as to the approximate percentage of total workplace speech this constituted, estimates ranged from 50 to 80%. Nurse-other health professionals was consistently cited as the second most common type of participants.

A second significant finding was that roll call (also known as endorsement) and hand over (alternately referred to as hand off, pass off, or pass over) were overwhelmingly regarded as the central communicative speech events in the standard nurse's working day.

Roll call typically takes place at the start of a working day and involves most, if not all, nurses who are about to start a shift within a specific department. The function might be considered similar to that of a police briefing before starting duty and typically involves one senior nurse informing any number of junior nurses about concerns, considerations, and any further notes of import for all concerned.

Hand over takes place whenever shifts end and is typically performed between two individual nurses who have been assigned the same patients. This event mainly

involves the updating of patient data and confirmation of a patient's current status.

In preceptor-preceptee relationships (loosely identifiable as senior-junior or senior-trainee), itemized in-service training instructions, either with patients present or in learning simulations, were also widely noted as a standard form of discourse-based interaction. In the Philippine and Singaporean settings, this invariably took the form of set checklists in which the preceptee was required to supply missing information in a traditional question-answer format whereas in the U.S. this took the form of more highly interactive and open-ended discussion.

3.2. On-site observation
3.2.1. Methods

Observation of workplace nursing discourse was undertaken by the researchers over two full days at both NUHS in Singapore (Guest) and at Georgetown University Hospital in Washington D.C. (Nambu), one day at Vicente Sotto Hospital in Cebu, the Philippines, and one day each at St. Paul's University College of Nursing in Manila and San Carlos University College of Nursing in Cebu (all Guest). Despite the geographical and cultural distances involved, consistent patterns in the framing and management of actual workplace nursing discourse were uncovered. It must also be noted that since the researchers were attempting to establish discourse frames, as opposed to compiling a spoken corpus of nursing English, speech was not recorded but consisted of handwritten notes.

3.2.2. On site observation: discussion

Let's connect the observational findings to some of the inquiries posed earlier.

1) Who are the primary participants in the workplace?

Although the sample is admittedly of a small size, nurse-nurse interactions appeared to take up an even higher percentage of total workplace discourse than was stated in the interviews. In Singapore, nurse-nurse was estimated to make up about 90% of all speech, with 80-90% in the Philippines. As the earlier interviews suggested, interactions with other health professionals was the second most common interaction, with nurse-patient (or nurse-patient's family) trailing.

2) What were the most common speech events for nurses?

In all workplace settings observed, handover, and roll call (endorsement) were regularly observed and constituted the most standardized speech events. Preceptor-preceptee (trainee) interaction was also common and tended to follow an instructional, question and answer, format.

3) How were set speech events and interactions therein typically managed?

Several features were noted with regard to speech event management:

a. Roll call

Roll call (or endorsement) involved little turn-taking with clear power status bestowed upon the senior nurse leading the roll call. Roll call followed a checklist format, meaning that the discourse was very declarative, fact-oriented, and truncated (both in terms of the common use of abbreviations and the ellipsis of grammatical detail). Openings and closing were also formalized. Roll call was in every case highly asymmetrical.

b. Hand over

Hand over was marked by much more equality in power status and thus more interactive, symmetrical turn-taking mechanisms were readily observable. Although the turns were still not of equal length (with the nurse finishing the shift typically dominating), hand over allowed for more usage of strategic competencies—questioning, repair, extension/elaboration, confirmation, appeals for clarification etc.

c. Turn taking

Nurse-patient interactions were also rarely of equal length. Most turns were nurse-initiated, as were openings and closings. This asymmetrical relationship appears to be different from the more symmetrical models noted in existing teaching materials. In the U.S. setting, it was noted that the nurse taking over the shift had almost the same or slightly fewer number of turns than the nurse handing over duty.

d. Preceptor-preceptee (senior-trainee) interactions

Preceptor-preceptee relations were unsurprisingly dominated by an instructional mode combined with a set question-answer format. Some salient differences in how these were managed in the U.S. versus the Asian locales were noted, with the U.S. method appearing to favor more open-ended questions, chances for confirmation or questioning during instructional settings, and considerations of positive face (most commonly praise).

4. Implications for the Design of Future ESP Nursing Materials

Four points arising from the field observations and interviews stand out in terms of possible application to future ESP nursing English materials development.

4.1. Description of participants

Although it is natural that most textbook and English study materials will frame nursing discourse as consisting primarily of nurses talking to patients who don't speak the local language, given that nurses will naturally speak the local language to fellow nurses and other health professionals, this rubric may not address the needs of all nursing students in Japan and similar non-English speaking countries.

Some nursing students will be planning to study and/or work in more international settings, thus some materials should be prepared which address the English of the foreign workplace- in which participants will be primarily nurse-nurse or nurse-other health professional. Current materials don't appear to address this need adequately.

Materials makers may also wish to address the question as to whether existing nurse-patient dialogue models accurately reflect actual turn-taking initiation, power relations, and turn lengths. Our research suggests otherwise.

4.2. Description of set speech events

In order to accurately address the needs of nurses studying or working in an English-speaking workplace, authentic and/or realistic samples of nursing discourse need to be provided. These will include authentic or at least accurate examples of hand over, roll call (endorsement), and preceptor-preceptee interactions. Nurses who are already trained and/or licensed in their native countries will almost certainly be familiar with the medical content, some specialized medical terms, and standard procedures but will unlikely to be able to manage these in English.

4.3. Strategic competence

Nurses who are not fluent in English will at times misunderstand some English speech or be uncertain regarding details. The ability to address lack of clarity, to confirm or redress possible misunderstandings, to repair, and negotiate communicative breakdowns is needed. Models as to how this is typically managed by native speakers of English in workplace settings will be crucial for nurses who plan to work/study in such settings.

4.4. Grammaticality (workplace speech forms and ellipsis)

Many of the workplace interactions noted in the research involved the widespread use of truncated grammatical forms, especially ellipsis. Although ellipsis in speech, particularly in intensive interactions where environmental knowledge is shared by members, has been widely recorded, many nursing English study materials still treat speech in a more 'textbook' fashion, meaning fully grammatical sentences with explicit subjects, objects etc. Not only will this prove unwieldy in actual workplace settings but it can add a burden to language learners by forcing them to navigate difficult lexico-grammatical avenues when more convenient, compact routes exist. Materials that accurately reflect the highly intensive nature of the workplace and the abbreviated forms used in those interactions need to be represented in the learning or study materials in order to prepare students for such settings.

However, we note that Widdowson[9] famously warns of the dangers in uncritically applying the results of corpus analysis into the development of pedagogical materials, arguing that linguistics applied in such a manner often fails to take into account the pedagogical perspective, the contextual conditions of the learner, and the individual learning process. Descriptions of how nurses frame discourse alone, regardless of authenticity, should not be developed in situ into teaching materials without due consideration for the particular learner and existing learning environment. But given that there are currently few, if any, teaching materials provided for nursing students who wish to study, train, or work abroad, we believe that our framework analysis may at least provide a foundation for the production of more suitable future nursing English teaching materials.

5. Conclusions

There is a great need for nursing ESP materials that help prepare non-English speaking nurses or students for English-speaking workplace environments. Accurately framing workplace discourse so that study and learning materials accurately reflect actual working discourse is the first step. In light of the research carried out by the authors, we recommend that future materials can address this framework by including:

a. An accurate emphasis upon nurse-nurse discourse,

these being recognized as the primary participants;

b. Accurate, realistic models of the major nursing speech events: roll call (endorsement), handover, and to a lesser extent, preceptor-preceptee (trainee) interactions;

c. Concern for strategic competence and the management of discourse that is likely to breakdown or lack clarity;

d. An accurate understanding of how turns are actually managed in workplace settings, including the effects of power relations, degree of symmetry, and opening-closing gambits;

e. Recognition of the grammar of speech, particularly as it pertains to the nurses' workplace, entailing an emphasis upon the use of ellipsis and other truncated language forms typical of shared knowledge and surrounding environments.

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Importance of Subjective Evaluations by Candidates in the Examination for Proficiency in English for Medical Purposes

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Well-designed multiple-choice questions (MCQs) demonstrate appropriate difficulty and have a high discrimination index. Subjective evaluations by candidates have been used to set questions of appropriate difficulty. To improve the quality of the Examination of Proficiency in English for Medical Purposes (EPEMP), we analyzed and compared the results of candidates' subjective evaluations and scores in the EPEMP pilot examinations. The dataset for analysis comprised the subjective evaluation results and scores of the first and second pilot EPEMP for levels three and four. The total scores were analyzed for each examination. The candidates subjectively evaluated the level of difficulty and total number of questions using five-point scales. The subjective scale was useful to estimate the obtained score. At the same levels, differences in subjective scales correlated well with the differences in scores. Differences in scores between levels three and four matched the difference in subjective scale in the reading section. Because the subjective evaluations of the number of questions and the level of difficulty are closely related, using the difficulty level of "difficult" to "moderate" and the quantity of "too many" to "enough" shows the ideal examination should consist of 100 MCQs within 90 minutes. The present research revealed the importance of examination analysis based on both the subjective evaluations and the scores. The data obtained might be useful for setting questions of appropriate level of difficulty and for the development of the EPEMP.

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Keywords: Score, Subjective evaluation, Medical English, Achievement test, Validation

1. Introduction

In 2008, the Japan Society for Medical English Education introduced the Examination of Proficiency in Eng-

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lish for Medical Purposes (EPEMP) to test students' ability to use medical English for practical purposes.[1] Those students who pass the level four (L4) examination are certified as having a medical English ability equivalent to those who graduate from a medical university or college in Japan. Those who can use English fluently for practical purposes in basic interactions with patients are able to pass the level three (L3) examination. Before the formal introduction of the EPEMP, two pilot examinations were held in 2007 to assess the quality and number of the examination questions. We previously reported the analysis of the results of the first and second pilot examinations for L3 and L4 of the EPEMP.[2,3] In that analysis,

Table 1. Number of candidates and number of questions in each section in the first and second pilot examinations.

	First pilot examination		Second pilot examination	
	Level 3	Level 4	Level 3*	Level 4*
Number of candidates	56	60	75	69
Number of questions	100	92	100	100
Vocabulary	70	70	50	50
Reading	30	22	50	50

*The same written examination was used in level 3 and level 4 examinations

Table 2. Subjective scales and candidates' scores in the first pilot examinations.

	Level 3	Level 4
Total		
Amount of questions	3.1 ± 0.8	3.6 ± 0.7
Score (%)	86.6 ± 11.0	82.7 11.3
Vocabulary		
Difficulty	3.5 ± 1.0	3.5 ± 0.9
Score (%)	85.2 ± 12.4	81.2 ± 13.3
Reading		
Difficulty	3.4 ± 0.9	3.9 ± 0.7
Score (%)	88.1 ± 13.3	87.1 ± 10.6

Statistically significant (*$p<0.05$, **$p<0.01$).

2.2. Number of candidates and contents of the examinations

Each examination consisted of MCQs with four options and a single correct answer. Each paper had two sections, vocabulary and reading, and various types of questions were used: For example, the vocabulary section included questions concerning idioms, fill-ins, medical abbreviations, and synonyms, while the reading section included questions based on short and long passages, written conversations, and text related to practical situations.[2] The number of candidates and number of questions in each section are shown in **Table 1**. For the second pilot EPEMP, the same examination was used for both L3 and L4. In each examination, candidates had to answer all the questions within 90 minutes.

2.3. Total score and difficulty index

For each examination we investigated each candidate's total score and the average score obtained in each section.

2.4. Subjective evaluation

Candidates subjectively evaluated each question. Using a five-point scale the candidates evaluated the overall difficulty of the questions in each section as follows: 1, too difficult; 2, difficult; 3, moderate; 4, easy; 5, too easy. The total number of questions was evaluated as follows: 1, excessive; 2, too many; 3, enough; 4, too few; 5, minimal.

2.5. Statistical analysis

We used the unpaired *t*-test to examine differences in means between two groups. Calculations were performed using the statistical software package Stacel2 (OMS Publishing, Saitama, Japan). Differences with a p value <0.05 were considered statistically significant.

we demonstrated that the average discrimination index was high (>0.2), meaning that the multiple-choice questions (MCQs) were of a high quality, i.e., able to differentiate well between high and low scorers. As the discrimination index is closely related to difficulty, it is important that the questions be of appropriate difficulty.[4,5] To evaluate difficulty, in addition to the average score for each question, the test-takers' subjective evaluation of questions, i.e., whether they are seen as too easy or too difficult, is also important. To improve the quality of the EPEMP, we analyzed the results of candidates' subjective evaluations for the EPEMP pilot examinations. We report the relationship between the results of subjective evaluations of the questions by the candidates and their objective scores. We emphasize the importance of analyzing the candidates' subjective evaluations.

2. Materials and Methods

2.1. The dataset

The dataset comprised the subjective evaluation results and the candidates' actual scores for the two pilots of the EPEMP for each of L3 and L4.

3. Results

3.1. First pilot examination

For the first pilot, different questions were used for the L3 and L4 examinations. **Table 2** shows the subjective

evaluation scale and the average score obtained by the candidates (values are represented as mean ± standard deviation). Results are also shown separately for the vocabulary and reading sections.

Average scores ranged from 81.2% to 88.1% and average subjective scales ranged from 3.1 to 3.9 for all sections. We compared the subjective scales and scores for the vocabulary and reading sections. At L3, there was little difference between the vocabulary and reading sections in either the subjective scale or candidates' scores, with no statistical significance (p=0.24, 0.56, respectively). However, in the L4 examination, the subjective scale was 3.5 in the vocabulary section compared with 3.9 in the reading section. The average score also increased from 81.2% to 87.1%. These differences were statistically significant (p=0.017, 0.0092, respectively). We did not compare values across the levels because both the candidates and the examinations were different.

3.2. Second pilot examination

For the second pilot examination, the same examination questions were used for both levels. **Table 3** shows the subjective evaluation scales and the average scores obtained by the candidates (values are represented as mean ± standard deviation). The average scores ranged from 63.8% to 74.5% and average subjective scales ranged from 2.3 to 2.6 for all sections. We compared the subjective scales and scores between the vocabulary and reading sections at each level. At L3, the subjective scales in both sections were 2.6 and the average scores were similar, 74.5% for vocabulary and 73.9% for reading, with no statistical significance (p=0.93). In addition, in the L4 examination, both the subjective scale and score in the vocabulary section were similar to those in the reading

Table 3. Subjective scales and candidates' scores in the second pilot examinations.

	Level 3		Level 4
Total			
Amount of questions	2.3 ± 0.8		2.2 ± 0.7
Score (%)	73.4 ± 13.8	–**–	64.7 ± 13.0
Vocabulary			
Difficulty	2.6 ± 0.9		2.4 ± 0.7
Score (%)	74.5 ± 13.1	–**–	63.8 ± 12.8
Reading			
Difficulty	2.6 ± 1.0	–*–	2.3 ± 0.8
Score (%)	73.9 ± 15.8	–**–	66.0 ± 14.1

Statistically significant (*p<0.05, **p<0.01).

section, without statistically significant differences (p=0.27, 0.34, respectively).

As the same examination was used for both levels, we compared the subjective scales and scores of the candidates between the levels. The overall scores for L3 were significantly higher than those for L4. In the reading section, the average L3 score was significantly higher than that for L4 (p<0.001). The subjective scale in L3 was also higher than that in L4 (p=0.037). However, in the vocabulary section, although the average score for L3 was significantly higher than that for L4 (p<0.001), no significant differences were found in the subjective scales (p=0.20).

4. Discussion

We are seeking to develop high-quality examination questions to achieve and maintain high levels of validity and reliability in the examinations. Ideal questions are characterized by both a high discrimination index and appropriate difficulty. To achieve this objective, we considered that subjective evaluative feedback from the candidates was essential.

We first compared the subjective scale and actual scores between the vocabulary and reading sections at the same level. We found that the differences in the subjective scale corresponded closely to the differences in actual scores. Therefore, the degree of difficulty could be estimated based on the subjective evaluation at each level. When the average subjective scale ranged from 2.3 to 2.6, it corresponded to an average score of 63.8%–74.5%. When the average subjective scale ranged from 3.1 to 3.6, it corresponded to an average score of 81.2%–88.1%. The subjective scale might thus be a useful predictor of the obtained score. Furthermore, because an average score of between 60% and 75% is considered ideal in MCQ-based exams,[6] questions of the level of difficulty ranked by candidates as "difficult" to "moderate" would seem appropriate.

In the comparison between the levels in the second pilot examination, the average total score was significantly higher at L3 than at L4, reflecting the difference in candidates' abilities. The difference in actual scores corresponds with the difference in subjective scores in the reading section. As candidates tend to answer questions in the vocabulary section quickly, but take longer to consider the text in order to answer the questions in the reading section, they can more precisely determine whether

questions are too easy or too difficult in the reading section.

In the first pilot examination, the average scores were too high, well outside the 60–75% target range, and the candidates subjectively evaluated the number of questions as "enough" to "too few". However, in the second pilot examination, although the number of questions was subjectively evaluated as "too many" to "enough", the average scores were at acceptable values. Because the subjective evaluation of the number of questions and the evaluation of their difficulty are closely related, the results of the subjective evaluation of difficulty and number of questions, and the actual obtained scores, together show that an ideal examination consists of 100 MCQs within 90 minutes, as was the case in the second pilot examination. In the future management of the EPEMP, the results of the subjective evaluation by the candidates can serve as an effective tool to validate the questions.

The present research reveals the importance of examination analysis based on both subjective and objective evaluations. The data obtained might assist in the selection of questions of appropriate difficulty and contribute to the development of the EPEMP.

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Content and Language Integrated Learning Methodology for Medical Students

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Content and Language Integrated Learning (CLIL) is a new teaching approach in Japan. Although popular in Europe, CLIL practices run counter to the accepted practices used in EFL classrooms in Japan, which can be confined to skills-based approaches and the Grammar Translation Method (GTM). A needs analysis of Japanese medical students English learning has revealed gaps between their professional needs and classroom instruction.[9] In this paper we address how CLIL approaches were introduced at Saitama Medical University to help bridge these gaps by investigating the impact that CLIL can have on learning both medical content and English skills. Since beginning CLIL and offering lessons that focus on learning medical science content through English, we discovered that more students appeared motivated to learn both the English and the medical science content. To better understand the students' views and the effectiveness of the CLIL program, a questionnaire and written narratives were used to collect both the students' and teachers' impressions. An analysis of their views about the CLIL program was encouraging and appears to be pertinent to developing future CLIL programs. Therefore, the authors believe that the results of this study could have implications for improving classroom teaching in a medical context and for the development of second language acquisition (SLA) in general.

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1. Introduction

English is the lingua franca of the medical world, but many medical students and medical practitioners in Japan seem to have difficulty acquiring English for academic and professional purposes. Some critics argue that the source of this deficit in language learning may be due to traditional teaching methods. Much of this criticism is targeted at English language teaching (ELT) in secondary education, which focuses on the Grammar Translation Method (GTM).[1] In response, the Course of Study for foreign languages provided by the MEXT (The Ministry of Education, Culture, Sports, Science and Technology) was revised in the 1980's to emphasize oral communication skills. But, despite this change, many Japanese teachers of English still do not offer opportunities to listen, read, speak or write in English, and continue to focus on teaching grammar and translating sentences.

Since the 1990's, teaching approaches based on English for Specific Purposes (ESP) and English for Medical Purposes (EMP) have been encouraged and implemented in the English curriculum at various Japanese medical universities. Also, during this time, the JACET special interest group (SIG) on ESP became active within the university teaching community.[2] However, ESP stems from language teaching and learning, with its connections to linguistic approaches and applied linguistics. ESP practitioners tend to analyze vocabulary use (e.g., register analysis) and language needs (e.g., needs analysis), as well as the dynamics of the discourse community (e.g., discourse analysis, genre analysis);[3-5] although ESP approaches have their place in the university Eng-

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lish language classroom, they are not necessarily linked to subject or content learning.

At Saitama Medical University, we were more interested in providing English-medium and content-based teaching for our 1st year medical students because neither traditional nor ESP methods have helped them acquire the language skills and content needed in the field of medicine. Therefore, as an alternative approach, we decided to implement Content and Language Integrated Learning (CLIL).[6] Here, we explain the CLIL methodology and explore the benefits of CLIL for 1st year medical students, and how it can promote meaningful communication opportunities, improve student motivation for learning, and assist in medical and science content acquisition.

1.1. This paper

The study reported in this paper investigated how implementing CLIL in Japan has assisted 1st year medical students in learning English and medical content. Throughout this paper, the authors will address the following questions:

· What is CLIL? How does it differ from skill-based ELT? Can it benefit medical students with learning English and medical science content in Japan?
· What was the rationale for integrating CLIL into the 1st year curriculum at Saitama Medical University? In what ways has CLIL been adapted for medical university students?
· What impact did CLIL have at Saitama Medical University? What issues did teachers face in implementing CLIL in the classroom? What were the students' responses to the CLIL classes? What are the implications of maintaining a CLIL program at a medical university in Japan?

2. CLIL Theory

CLIL has become one of the most widely used methods in language teaching in Europe, and is regarded as a platform for new teaching methodology with a broader scope than prevalent language teaching practices, such as Communicative Language Teaching (CLT) or GTM. Conceived as an approach to education in which language teaching and learning are combined with the teaching of school subjects, CLIL "refers to situations where subjects, or parts of subjects, are taught through a foreign language with dual-focused aims, namely the learning of content, and the simultaneous learning of a foreign language."[6] CLIL is an approach to teaching and learning which requires language teachers to understand not only how language should be taught, but also what kind of content should be taught through the educational process. This means that in CLIL classes, language is used as a medium for learning content, such as science or math, and the content is used in turn as a further resource for learning languages. As a result, students can put the language they are learning into practice, and the content becomes a powerful motivational vehicle to learn language.

Since the 1990's, CLIL has increased in popularity across Europe, and with its popularity, a wide array of teaching approaches has been introduced in CLIL classrooms. This has led some educators to question what constitutes a CLIL lesson. In response, CLIL guidelines were provided by the European commission report, *Content and language integrated learning (CLIL) at school in Europe* (2006) which include:

· Preparing pupils for life in a more internationalised society and offering them better job prospects on the labour market (socio-economic objectives);
· Conveying to pupils values of tolerance and respect vis-á-vis other cultures, through the use of the CLIL target language (socio-cultural objectives);
· Enabling pupils to develop:
  - language skills which emphasise effective communication, motivating pupils to learn languages by using them for real practical purposes (linguistic objectives);
  - subject-related knowledge and learning ability, stimulating the assimilation of subject matter by means of a different and innovative approach (educational objectives).[7]

Mehisto, Marsh and Frigols (2008) further define CLIL by using four key principles: community, content and communication working together to foster cognition (**Fig. 1**).[8,9] Do Coyle (2006) offers similar model, but substitutes "culture" for "community."

Fig. 1. Mehisto, Marsh and Frigols' (2008) four CLIL principles

Cognition

Community / Content / Communication

3. The CLIL Program at Saitama Medical University

A needs analysis of medical students in Japan calls for an improvement in English reading skills, an emphasis on English medical vocabulary and the development of practical English communication skills.[10] However, our medical students have not always been satisfied with existing skills-based ELT programs, even though the basic English skills that these programs provide are needed. In 2009, as an alternative to skills-based ELT classes, Saitama Medical University started CLIL-based English courses to introduce basic medical science content to 1st year medical students. The rationale for adding CLIL to the curriculum was based on the following criteria:

- Students have a particular interest to learn medical content in English.
- Medical doctors require students to have basic science knowledge in English before beginning their education in the field of medical sciences.
- Students need to have opportunities to listen to English for medical purposes and also be able to interact with each other in English.
- Whenever teachers enjoy teaching and students enjoy learning they make a good learning community.

Table 1. The 1st year English curriculum

Courses Offered Each Semester	Number of Classes	Number of Students Per Class	Number of Instructors	
			Native English Speakers (NES)	Non-native English Speakers (NNES)
Reading	4	30	0	2
Writing	10	12	5	1
Communication (Interaction)	8	15	4	1
Communication (Presentation)	4	30	1	1
CLIL	5	25	5	1

Table 2. The learning checkpoints for Mehisto, Marsh and Frigols' four principles

Cognition
· Content, language and learning skills outcomes are articulated in cooperation with students · Learning builds on a student's existing knowledge, skills, attitudes, interests and experience · Students analyze achievement of learning outcomes independently, with other students and with the teacher, and work to set new outcomes

Community (Culture)	Content	Communication
· Students feel that being members of a learning community is enriching · Students have the self-confidence and skills to work within a group and the local community, balancing personal interests with those of others · Cultural content is integrated	· Content is clearly linked to the community within and outside the classroom · Students apply new content and develop related skills through experiential activities · Content is substantive without being overwhelming · Content from various subjects is integrated	· Students actively use the right to participate in activities and communication, in the classroom and in the community · Students and teachers co-construct and negotiate meaning · Language/ communication skills are developed in all subjects

3.1. Saitama Medical University's English curriculum

At Saitama Medical University, a variety of English classes are offered in the 1st year, reverting to EMP classes in the 2nd, 3rd and 4th years. In the 1st year, the English teachers' goals are to strengthen the students' English knowledge and skills as well as their basic medical-science knowledge. From the 2nd through the 4th years, students learn more in-depth medical English and skills through EMP, by reading medical research papers, writing medical charts and interacting with patients.

Table 1 shows a semester breakdown of the English courses for 1st year students. Students are required to take five 65 minute English classes per week. The students later cumulate their year-long English study by taking a TOEFL-ITP test, with a goal of achieving a score of 500 points.

3.2. The CLIL program at Saitama Medical University

Before starting our current CLIL program, a pilot CLIL program was conducted by three native English-speaking (NES) teachers and a non-native English-speaking (NNES) teacher in the 2009-2010 academic year. Although not fully trained in CLIL methodology, the teachers attempted to teach CLIL based on their own teaching knowledge and experiences, while providing classes which included different kinds of topics and learning activities.

In April 2010, the number of CLIL teachers was expanded to six to reduce the number of students per class, and the CLIL program was also redefined. The importance of students communicating with each other,

Table 3. The NES syllabi and highlights from each CLIL course

Syllabus Title	Example Topics	Example Objectives
1. Science Topics in Secondary Education	• Health and disease • Antibiotics • How earthquakes happen • The greenhouse effect	• To guess the meaning of words from context and by elimination • To understand technical information given orally
2. General Certificate of Secondary Education in Biology in the UK	• The circulatory system • The eye • Blood vessels • The heart	• To build a reference folder of materials about the human body • Communicate with others about subject matter
3. General Certificate of Secondary Education in Biology in the UK	• Health and drugs • Smoking • Food chains and food webs • Inheritance and variation	• To study, remember and utilize new vocabulary for the course topics • To build confidence and enthusiasm for English
4. Complementary and Alternative Medicine	• Yoga • Aroma therapy • Acupuncture • Herbalism	• Identify and describe some of the anatomical regions of the body • To become more comfortable interacting in English
5. Nutrition and You	• The obesity epidemic • Guidelines to nutrition • Water • Teeth and diet	• To develop and understanding of issues related to poor eating habits • To build a larger vocabulary related to medical terminology and nutrition

exchanging information, and forming a learning community was emphasized, as well as skills like synthesizing, evaluating and applying knowledge acquired through the communicative process. In addition to this, the new program was further refined using Mehisto, Marsh and Frigols' learning checkpoints (**Table 2**). These checkpoints were used to better align course objectives and class activities, and to development a new course syllabus by the NES teachers.

4. The CLIL Syllabus

In creating each new course syllabi, the teachers referenced the CLIL checkpoints from **Table 2**, and focused on content that linked to both the students' learning world and their pre-existing knowledge base (see **Table 3**).

As part of each new CLIL course, teachers attempted to provide opportunities for discussion in a peer-based learning community, helped the students improve domain-specific English words and phrases linked to their medical studies, and offered them chances to

engage in problem-solving activities. The nutrition course's lesson, 'Guidelines to Nutrition,' displays an example of the new direction the CLIL course took in the 2010-2011 school year, as well as integrating the four CLIL principles—community (culture), content, communication and cognition.

4.1. A sample CLIL lesson: Guidelines to nutrition

One of the learning outcomes of this CLIL lesson was for students to explore what defines a healthy diet. Throughout the lesson, the teaching material was gradually introduced, or scaffolded, allowing students to build a better understanding of the content in their learning group.

In the warm-up to this lesson, pairs of students ranked a list of 10 common foods from the healthiest to the unhealthiest. No nutritional information was offered; instead students relied on their own knowledge of nutrition. Answers were not provided following the activity, and students left the activity aside until the end of the lesson.

Afterward, groups of students started their investigation of defining a healthy diet by examining the 4 basic food groups. First, each group identified the names of the four groups. Through discussion, students produced a variety of terms and later needed to reach a consensus in constructing titles for the four food groups. Terms like, "protein" and "carbohydrates" were sometimes used instead of "meat and seafood" or "breads and grains" and these titles proved useful, considering that terms like "meats and seafood" didn't describe other protein-based foods like eggs and legumes. Throughout this exercise, students were actively participating in communicating with team members, and reconstructing their understanding of the concept of dietary food groups. Their discussion was at times in Japanese, but they actively researched the English terminology and language needed to communicate their ideas to other groups and their classroom teacher.

Each student then recalled their diet from the previous day and noted the food they ate in each of the four food groups. There was confusion as to where to put foods

like tofu or *miso* soup, but titles like "protein" helped to clarify meaning and separate the different types of food. After categorizing the previous day's diet, students used this information to construct bar graphs, showing the number of servings in each category.

Within each group, students compared their graphs, decided who had the healthiest diet, and explained why they thought it was the healthiest. Often team members explained that the student with the healthiest diet had bars in the graph that were equal in size. But, the question was raised: "Does having equal amounts from each food group qualify as the healthiest diet?" A food pyramid was provided by the teacher, showing an example of recommended servings for each of the food groups. Student teams then re-evaluated their views and offered a new analysis about who had the healthiest diet. Through communication about their diets with their peers, and with new ideas being scaffolded by the classroom teacher, students started to reconsider their understanding about what constitutes a healthy diet.

The lesson ended with a look at nutritional labels from the United States and the confusion they can cause consumers. At this point, a new nutritional labeling system called NuVal[11] was introduced. Created to help simplify nutritional labels for US consumers, NuVal consists of a single number ranking scale, ranging from 1-100, with one being the unhealthiest and one-hundred being the healthiest. Returning to the food ranking warm-up from the beginning of the lesson, students checked their answers in relation to the NuVal scores.

The fact that some foods are considered more nutritious than others further altered the students' decisions in choosing the healthiest graph and the healthiest diet. A student may have had the right number of servings of food for a particular food group, but they may not have had the most nutritious choices. Again, the definition of what is a healthy diet needed to be further developed by the students' teams.

This CLIL lesson provides an example of how the content helped foster communication in the learning community. Students were active in constructing and re-constructing an understanding about the lesson's learning concepts, and cognitive processes were therefore enhanced by this union of communication, language and content, motivating students to build a greater understanding of the lesson's material.

5. Questions Raised About the CLIL Program

Several questions were raised while implementing the CLIL program. For example, how would teachers without CLIL methodology training and (in some cases) a lack of medical science background, be comfortable in utilizing this new teaching method? Would CLIL be embraced by both teachers and students? Would students be motivated to express themselves with their peers and their classroom teacher? Would CLIL help improve both the students' English ability as well as their medical content knowledge?

We decided to find out more about the students' and teachers' views about the CLIL program. From the student's perspective, we wished to know how CLIL classes appealed to them, and if the learning opportunities were valuable. With the teachers, we were curious about their impressions about teaching CLIL lessons, and the issues they had encountered in implementing CLIL.

5.1. Data collection methods

Throughout the 2010-2011 year, the 5 NES teachers' views about CLIL were collected in two ways: through discussions at three staff meetings at the end of each semester and through an email report at the end of the school year. With the students, a one-page questionnaire was given to 122 1st year students at the end of the school year (**Appendix II**). The students had 20 minutes to complete the questionnaire and could anonymously respond to the questions in either English or Japanese.

6. Results

All teachers reported about their CLIL classes, expressing the successes, failures and concerns in teaching CLIL. Their views are summarized in the section titled "NES teachers' reflective thoughts." With the 1st year students, all 122 students completed the questionnaire, with 118 of the 122 students writing comments for questions 7-9 in either Japanese of English. Their feedback from this questionnaire is included in the "Student Class Satisfaction Questionnaires" section of this paper.

6.1. The NES teachers' reflective thoughts

Through discussions and written feedback, all five NES teachers reported their views about teaching CLIL. Their feedback mostly centered on adjusting to a new teaching method, the value of utilizing meaningful con-

tent, and the need for having an awareness of the students' English ability levels.

Although some of the NES teachers tended to be more aligned with CLT teaching approaches, they all reported a pedagogical shift while teaching CLIL. In approaching a CLIL lesson, they struggled at first with the need to be focused on the content, while also being sensitive about the language. Whereas in their CLT-based classes, they would have reversed this practice and focused predominately on the language.

In relation to this pedagogical shift in approaching a lesson, teachers also probed for ways to make the content more meaningful for their students. Due to the range of English levels in the classroom, the NES teachers reported the necessity for making the content accessible to their students by experimenting with the best methods of teaching both content and language. The NES teachers realized that a variety of activities was needed to learn the lesson's content and to help foster language skills. This means that lessons could contain an assortment of teaching practices from a range of disciplines (e.g., reading comprehension activities, hands-on activities, surveys, movement activities, illustrating text, and mathematics).

A final point raised by the NES teachers concerned the student's English language ability in relation to the lesson's content. CLIL classes were not separated by English ability levels, therefore the language of the lesson could not be completely ignored when selecting the content for a lesson. Although there were opportunities for students to collaborate and address meaning during a lesson, teachers reflected on how they needed to adjust the difficulty of the language content, the amount of the content, and the teaching approaches used to meet the students' language needs.

6.2. The students' class satisfaction questionnaires

At the beginning of the 2010-2011 school-year, a class satisfaction questionnaire was given in Japanese to 123

Table 4. Students' CLIL satisfaction ratings: numerical data (Scaled from 1 to 7, with 7 being the highest degree of satisfaction)

Satisfaction degree	1	2	3	4	5	6	7
Number of students	1	1	11	25	33	35	17

Table 5. Questions 1-4 from the end of the school year CLIL questionnaire (2010-2011)

I. How did you like your CLIL classes? (please circle one answer)		
① They were great	=36	(29.5%)
② They were good.	=59	(48.4%)
③ Sometimes they were ok.	=25	(20.5%)
④ I didn't enjoy them	=2	(1.6%)
II. How did you feel about your first CLIL lesson? (please circle one answer)		
① Excited	=46	(37.7%)
② Nervous	=15	(12.3%)
③ Confused	=11	(9.0%)
④ Normal	=50	(41.0%)
III. What did you like about your CLIL lessons? (circle as many answers as you wish)		
① Learning about medical or science topics	=75	(46.9%)
② Thinking about challenging problems	=23	(14.3%)
③ Practicing English	=32	(20.2%)
④ Presenting ideas to classmates	=27	(16.9%)
⑤ Other	=3	(1.9%)
IV. In CLIL lessons, I prefer: (circle as many answers as you wish)		
① Teacher /student discussion	=51	(26.6%)
② Pair work	=32	(16.7%)
③ Group work	=68	(35.4%)
④ Independent learning	=9	(4.7%)
⑤ Teacher lecturing	=31	(16.1%)
⑥ Other (*Teacher's lecture)	=1	(0.5%)

1st year students (see **Appendix I**). Their satisfaction with the CLIL program appeared positive, as seen from the questionnaire's results in **Table 4**. With CLIL, the students' reported a satisfaction mean score of 5.1 in comparison with other 1st year English classes, (3.9 for Reading, 5.0 for Writing, and 5.2 for Communication Interaction and Presentation classes).

At the end of the 2010-2011 school year, a more detailed CLIL class questionnaire was given to 122 of the 1st year students to better understand their impressions of the CLIL program (see **Appendix II**). The results from this questionnaire gave further insight into the impact of the CLIL program (**Tables 5 and 6**), including how the students felt CLIL classes benefited their content learning (**Fig. 3**) and their English skills (**Fig. 4**).

The students' responses to the end of the year questionnaire were positive. Overall, they felt that the CLIL lessons improved their content knowledge, with 10% reporting little or no improvement. Furthermore, they reported that the studying of medical content was the best part of CLIL. Content learning was important to the students, with several students requesting that more medical content be added to the lessons in the future.

In relation to the CLIL classes improving their English skills, the students reported that their English skills increased through CLIL lessons, with 15% reporting little or no improvement. They cited pair work and group work as their preferred means to learn and communicate in the classroom, and they also valued speaking with their classroom teacher. However, some students wished for more chances to work in groups and to have more opportunities to communicate in English in the CLIL classroom.

Table 6. Questions 7-9 from the end of the school year CLIL questionnaire (2010-2011)
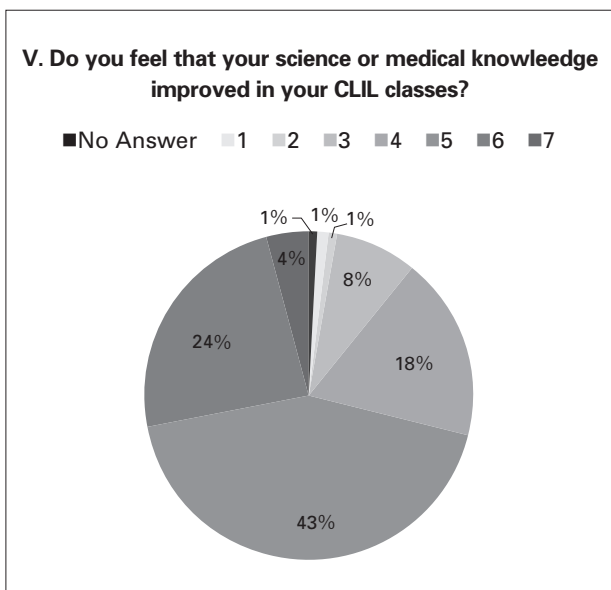
VII. You studied in 3 different CLIL classes. Which one was your favorite CLIL class? Why?		
The reasons "why" can be grouped into these categories: *Teacher's character *Class atmosphere *Teaching techniques *Activities *Content		
VIII. What would you improve about CLIL classes?		
Nothing to change	=21	(17.2%)
More medical terms	=21	(17.2%)
More opportunities to speak / use English	=16	(13.1%)
No / less homework	=13	(10.7%)
More group work	=6	(4.9%)
Other	=45	(36.9%)
IX. Would you be interested in having more CLIL lessons in the future at SMU?		
Yes	=79	(64.8%)
No	=10	(8.2%)
Unsure	=11	(9.0%)
No response	=22	(18.0%)

7. Discussion

CLIL is a new learning approach for both teachers and students at Saitama Medical University, but it was accepted positively by students. Based on the early feedback from the beginning of the 2010-2011 academic year, some students questioned how to best learn English in a CLIL class. Some could not find the appropriate learning strategies to match the class structure, and others had difficulty following the teacher's explanations. But, as the year progressed, more and more students gradually understood the structure of a CLIL classroom, and became motivated by the class activities. One student stated on the first term questionnaire, "This English classroom is a little bit different, so I was worried [at] first but I began to realize it is fun because we are using English. The other day I talked to my classmates in English spontaneously." Once the students became familiar with CLIL approaches, they were engaged by the content and were more motivated to communicate in English. After adjusting to the CLIL class structure, the students' reaction to the lessons was positive. This can be seen in the students' responses from the end of the year questionnaire, stating that the CLIL lessons were mostly

"great" or "good" and that many of them would enjoy studying by using CLIL in the future.

Results from the end of the year questionnaire further highlighted the 1st year students' views about learning in CLIL classes. Students valued learning medical and science content while using English to communicate in a group-based community. Although some students reported wanting more medically-related content, overall the 1st year student felt their medical or science content knowledge was broadened through the CLIL lessons (**Fig. 3**). This could be a reflection of both the students' desire to learn medical content in their English classes, and the NES teachers focus on the lesson's content instead of purely teaching English skills.

However, in reference to content acquisition, the students' language abilities were considered by the NES when planning a CLIL lesson. Content that was challenging needed techniques that would help with comprehension. At the end of each term, the NES teachers discussed at their meetings the kinds of content they were teaching and the methods that they were using to convey this content. As no one common method or technique proved successful with all the NES teachers, they acknowledged that a variety of lesson techniques in the classroom, coupled with group work or pair work, greatly aided in content acquisition and built a stronger learning

Fig. 3. 1st year self-evaluation: improvement of science or medical knowledge(Scaled from 1 to 7, with 7 being the highest degree of satisfaction)

V. Do you feel that your science or medical knowleedge improved in your CLIL classes?

■No Answer ■1 ■2 ■3 ■4 ■5 ■6 ■7

Fig. 4. 1st year self-evaluation: improvement of English skills(Scaled from 1 to 7, with 7 being the highest degree of satisfaction)

VI. Do you feel your English improved in your CLIL classes?

■No Answer ■1 ■2 ■3 ■4 ■5 ■6 ■7

community. The students recognized this as well, commenting that the teacher's multiple techniques in teaching CLIL were highly valued for their learning of content. One student confirmed this stating that they "learned ideas from different angles."

Communication was enhanced on several different levels in the CLIL lessons. Students needed to focus on and comprehend the teacher's discourse, discourse that, although not overwhelming for all the students, was challenging for some. The teacher's discourse was coupled with discussion with peers or group members, and enabled students to further construct meanings of the lesson's content and problem-solve various activities in English. In terms of communication, group work proved to be useful in the classroom and was cited as the preferred approach for learning in a CLIL lesson. Despite a variety of individual learning styles in the classroom, only a few students reported a desire to work independently. Peer interaction, in the form of group work, and student-to-teacher interaction was valued by the 1st year CLIL students, because it provided meaningful opportunities for understanding the lesson content and motivated language use in the classroom.

Concerning the content, other students went on to comment that "the topics were interesting" and that "the CLIL themes related to our lives." The variety of topics offered by the NES teachers were further reflected by one student, "I could get every kind of knowledge about medical topics ," while another student stated, "We could know what we didn't know before." Some of the NES
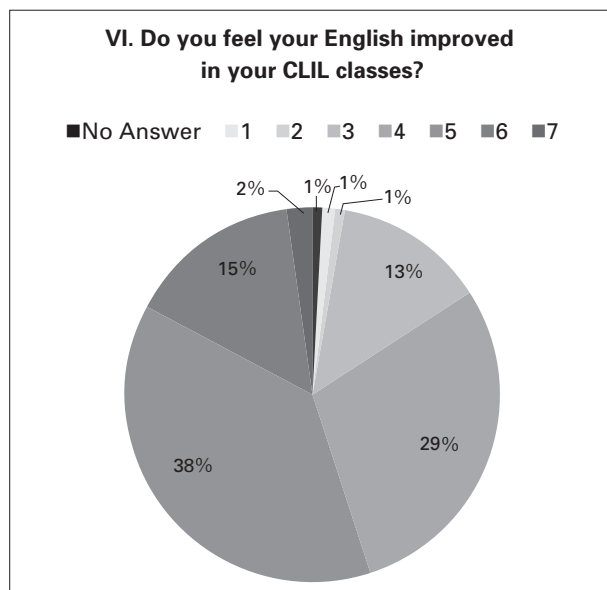
teachers do not have a background in medical science, but each member was able to offer support in understanding medical topics and finding appropriate material to use in the classroom. It can be argued that CLIL acted as a catalyst to motivate not only the students' learning at Saitama Medical University, but also the teacher's ability to be more involved with new forms of content and teaching approaches.

8. Issues and Implications

Implementing CLIL has raised several implications for future English language learning and teaching. One issue relates to creating a stronger and more stable CLIL program for our students. The feedback from the 1st year students has been positive, and teachers' reflective thoughts about teaching CLIL have been promising as well, but CLIL could weaken and potentially fail without proper support and direction. Therefore, a more solid teaching foundation with an integrated CLIL methodological-base needs to be created by the NES teachers. This can be accomplished by more frequent staff meetings focusing on CLIL approaches, by attending CLIL seminars and workshops, and by formulating a CLIL handbook that outlines our university's theory, techniques and resources.

Another issue relates to teaching resources and materials. Teachers had problems finding good lesson resources, and without a CLIL textbook to utilize, teachers needed to spend time creating their own materials

each semester. If CLIL teacher training is provided, it will need to include not only workshops about CLIL teaching methods and activities, but also information about how to author appropriate CLIL materials.

Finally, there is a lack of data to further support the improvement in English skills and content acquisition at Saitama Medical School. In the future, we will continue to use the TOEFL IP test to gauge the student's English levels. We will need to collect data over a period of time to make any quantitative comparisons between our student's English ability levels before CLIL was taught at Saitama Medical University and after starting the current program.

9. Conclusion

Implementing CLIL as part of medical education programs in Japan can offer changes in assumptions about language learning that medical professionals, language teachers and medical students hold. CLT is accepted by many English teachers, but many English classrooms, where interaction or productive activities are not often provided, are based on teacher-centeredness or skills-based teaching. This study presents the CLIL approach, which focuses on both content and language, and shapes the students' knowledge through cognitive activities, CLIL offers positive motivational outcomes. As Coyle, Hood and Marsh further state, "CLIL not only promotes linguistic competence, it also serves to stimulate cognitive flexibility. Different thinking horizons and pathways which result from CLIL, and the effective constructivist educational practice it promotes, can also have an impact on conceptualization (literally how we think), enriching the understanding of concepts, and broadening conceptual mapping resources."[12] This is a very important factor in medical education, where CLIL not only encourages medical students to learn EMP, but also fosters ways to think about what they have learned and how they study medicine through English, and, most importantly, why they are learning English for their future career.

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Appendix I: 1st term student questionnaire

英語授業アンケート　1学期

番号（　　　　　　　　　　　　　　　　　）　名前（　　　　　　　　　　　　　　　　　　　　　）

それぞれの授業について意見を聞かせてください。今後の参考にします。成績に影響することはありませんから、率直なコメントをお願いします。該当の番号に○をつけて、コメントしてください。

リーディング（火曜日2、3時間目）

・満足度　　　　7（大満足）　　6　　5　　4　　3　　2　　1（大不満）
（理由：　　　　　　　　　　　　　　　　　　　　　　　　　　　）
・活動の内容に対する希望／質問他

ライティング（火曜日2、3時間目）

・満足度　　　　7（大満足）　　6　　5　　4　　3　　2　　1（大不満）
（理由：　　　　　　　　　　　　　　　　　　　　　　　　　　　）
・活動の内容に対する希望／質問他

CLIL（水曜日1時間目）

・満足度　　　　7（大満足）　　6　　5　　4　　3　　2　　1（大不満）
（理由：　　　　　　　　　　　　　　　　　　　　　　　　　　　）
・活動の内容に対する希望／質問他

オーラルコミュニケーション（会話）（金曜日1、2時間目）

・満足度　　　　7（大満足）　　6　　5　　4　　3　　2　　1（大不満）
（理由：　　　　　　　　　　　　　　　　　　　　　　　　　　　）
・活動の内容に対する希望／質問他

オーラルコミュニケーション（プレゼンテーション）（金曜日1、2時間目）

・満足度　　　　7（大満足）　　6　　5　　4　　3　　2　　1（大不満）
（理由：　　　　　　　　　　　　　　　　　　　　　　　　　　　）
・活動の内容に対する希望／質問他

裏面の表［CEFR（ヨーロッパで開発された外国語能力尺度）］の記述を見て、自分はどの段階にあると考えますか？該当の記号に○をつけてください。

Listening（聞く）	C2	C1	B2	B1	A2	A1
Reading（読む）	C2	C1	B2	B1	A2	A1
Spoken Interaction（やり取り）	C2	C1	B2	B1	A2	A1
Spoken production（発表）	C2	C1	B2	B1	A2	A1
Writing（書く）	C2	C1	B2	B1	A2	A1

Appendix II: End of the year student questionnaire

CLIL Class Questionnaire

Please answer the following questions below in English or Japanese.

I.   How did you like your CLIL classes? (*please circle one answer*)
①   They were great!   ③   Sometimes they were ok.
②   They were good.   ④ I didn't enjoy them

II.   How did you feel about your first CLIL lesson? (*please circle one answer*)
①   Excited   ③   Confused
②   Nervous   ④   Normal

III.   What did you like about your CLIL lessons? (*circle as many answers as you wish*)
①   Learning about medical or science topics   ③   Practicing English
②   Thinking about challenging problems   ④   Presenting ideas to classmates
                                               ⑤   Other (   )

IV.   In CLIL lessons, I prefer: (*circle as many answers as you wish*)
①   Teacher /student discussion   ④   Independent learning
②   Pairwork   ⑤   Teacher lecturing
③   Group work   ⑥   Other (   )

V.   Do you feel that your science or medical knowledge improved in your CLIL classes?
   (*this scale is from "7 = greatly improved" to "1= no improvement"*)
        7   6   5   4   3   2   1

VI.   Do you feel that your English skills improved in your CLIL classes?
   (*this scale is from "7 = greatly improved" to "1= no improvement"*)
        7   6   5   4   3   2   1

VII.   You studied in 3 different CLIL classes. Which one was your favorite CLIL class?
       Why?

VIII.   What would you improve about CLIL classes?

IX.   Would you be interested in having more CLIL lessons in the future at SMU?

Instructions for Writing a Report on How to Apply a Therapy Technique:
Using Functional Linguistics for Speech Therapy Students

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Background: In the mainstream curriculum, medical students study techniques for treating patients. The major job of medical practitioners is to apply those techniques to cure particular patients. In order to achieve this goal, they require knowledge about how to apply a technique, e.g., knowledge about actions to implement it, tools, risks, and so forth. Students can write about such practical knowledge using specialist books. If students write about how to use professional techniques in English lessons, the lessons will be viewed as useful for future jobs, increasing their instrumental motivation. This paper presents a teaching method for this activity.

Methods and Results: I investigated the English lessons I gave to first-year students majoring in speech therapy at a college. I evaluated the method using one student's writing sample. Characteristics and effects of the method include the following. First, a model text shows a structure that concretizes and analyzes a technique. It concretizes the technique by presenting actions, utterances, and tools for implementing it. It then analyzes the technique by clarifying its purposes, effects, and advantages. Second, the model text shows nominalized verbs in the subjects of sentences. These nominalized verbs help the text thematize the technique in order to analyze it repeatedly. Following the model text, the student concretizes and analyzes the technique using nominalizations in the subjects of sentences.

Concluding Remarks: This method has the potential to help other medical majors (e.g., nursing students) write about how to use professional techniques in English.

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1. Introduction

In the mainstream curriculum, medical students study techniques for treating patients. For example, nursing students study techniques for giving an injection or caring for hospitalized children. The main job of medical practitioners is to apply those techniques to cure particu-

lar patients. To achieve this goal, they require knowledge about how to apply such techniques. For instance, nursing students learn that nurses should provide hospitalized children with opportunities for play in order to decrease their stress.[1] To use this technique successfully, nurses must have a strategy (an overall plan) by which to implement it (e.g., to have a child take light exercise in a playroom).[2] They also need to know about tools that sick children can use (e.g., tricycles and wagons) and risks involved in play (e.g., the child may be infected with microorganisms from the tools).[2] Thus, they require specific knowledge about strategies, tools, risks, and so forth in order to use a technique.

Students can write about such practical knowledge during English lessons. They may write about how to use a particular medical technique for a job by using informa-

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tion from specialist books and their own life experience (e.g., nursing students may write about a pediatric nursing technique using their childhood memories). Knowledge about how to use techniques is crucial for students' success in their future jobs. Therefore, if they write about how to apply professional techniques during English lessons, the lessons will be viewed as useful for their jobs, increasing their *instrumental motivation*, i.e., motivation to learn for practical purposes.[3]

Studies of medical students' ESL writing have tended to focus on general academic or medical topics such as nutrition education, AIDS, writing support for a bioscience course assignment, and the transformation of a lecture into an essay.[4-7] Thus, the existing literature does not focus on teaching writing about particular medical techniques. This paper therefore presents a method, based on functional linguistics, for helping students write about how to apply medical techniques. In this study, *functional linguistics* refers to the linguistics system founded by Halliday, which focuses on function in language.[8]

2. Methods

2.1. Research method and setting

For this study, action research was chosen as its research method. Thus, the research procedure was to develop a plan for teaching, put it into action, observe, and reflect on the effects of the action.[9] In keeping with this procedure, this paper describes my method, critically evaluates it, and offers suggestions for future action.

I investigated the English lessons I gave to 45 first-year students majoring in speech therapy at a college. The students had one lesson each week. They wrote reports about a therapy technique after reading source texts from guidebooks about speech therapy. They completed reports about five therapy techniques in lessons 6, 9, 13, 17, and 21, submitting each report in the following lesson. There was a ten-week break between lessons 14 and 15. Data came from the students' writing assignments and a questionnaire conducted immediately after the assignment was submitted during lesson 14. This paper explains the teaching method, taking the example of lessons 15, 16, and 17, whose topic was *event structure therapy*, a therapy technique for children with language disorders in which a therapist and a child act out daily events (e.g., shopping) to practice a language element (e.g., vocabulary about food).[10,11]

2.2. Stages of the teaching method

I drew on the procedure of a genre-based approach to teaching writing presented in Gibbons' work.[12] Her approach teaches genre (e.g., narrative and exposition) through the following stages:

Stage 1: *Building the field*, which develops knowledge about the topic.

Stage 2: *Modeling the genre*, which teaches knowledge about the target genre.

Stage 3: *Joint construction*, where the teacher and students write a text together.

Stage 4: *Independent writing*, where students write a text independently.

I spent two lessons on *building the field* and one lesson on the subsequent stages. I implemented these stages as follows.

2.3. Building the field and modeling

In the stage called *building the field*, the class read texts about a therapy technique.[10,11] I helped the students understand technical terms by presenting explanations of the technical terms in dictionaries written in Japanese. In the *modeling* stage, I modeled not a genre but a text structure and language that helped the students write how to apply the therapy technique. In order to do so, I wrote a model text such as the following, which talks about how to use the event structure (ES) technique:

[1] Event structure activities can be used as follows. [2] First, a therapist may use cooking breakfast to teach "Will you..." [3] The therapist and the client play a mother and child using toys. [4] For example, the mother says, "Will you cut tomatoes?" [5] Second, cooking breakfast helps teach vocabulary about food, e.g., "bread" and "butter." [6] Third, it allows them to practice prepositions, e.g., "Put the bread on the dish." [7] They can use toys, e.g., toy vegetables, to promote talk. [8] As a result of the therapy, the client will speak better when cooking breakfast at home. [9] Cooking breakfast is a good choice because the client can practice it at home every day.

The above text models the following elements for the students.

2.3.1. Structure of the model text

First, the text shows a structure designed to concretize and analyze a technique. Sentence 1 introduces

the ES technique. Sentence 2 then concretizes the technique, presenting a strategy to implement it (i.e., to act out cooking breakfast). The strategy is further concretized in three steps: first, sentence 3 introduces the actions performed by the therapist and client (i.e., playing a mother and child). Second, sentence 4 cites an utterance that they can speak (i.e., *"Will you cut to matoes?"*). Third, sentence 7 presents tools that they can use (i.e., *toys* and *toy vegetables*). In this way, the text concretizes the technique step by step: it becomes increasingly concrete as it progresses, moving from the concept of a technique to a strategy for implementing it, to people's action, an audible utterance, and finally tangible tools.

On the other hand, the text analyzes the technique in different ways. This text analyzes the *cooking* strategy in three ways: First, sentences 2, 5, and 6 clarify the strategy's purposes (i.e., to teach *"Will you," vocabulary about food*, and *prepositions*). Second, sentence 8 identifies the strategy's effect (i.e., the child can speak better when cooking at home). Third, sentence 9 points out the strategy's advantage (i.e., the child can practice it at home every day). In summary, the text concretizes the technique in terms of strategy, action, utterance, and tools, while analyzing the strategy in terms of purposes, effect, and advantage (**Fig. 1**). I explained the above structure to the students in this study.

2.3.2. Nominalization in theme

Second, the model text shows nominalized processes in themes. In functional linguistics, *process* refers to a semantic element expressed by a verb phrase, while *theme* refers to the first part of a clause.[13] Functional linguists point out that nominalized processes are useful for scientific writing because they allow the processes to be classified and described.[14] The model text uses them in themes (i.e., *cooking breakfast* in sentences 5, 6, and 9). This helps thematize the *cooking* strategy rather than the persons involved (i.e., the therapist and patient) in order to analyze it from various angles, as shown in 2.3.1 above. I taught nominalization in theme explicitly in the *joint construction* stage.

2.4. Joint construction
2.4.1. Making a conversation

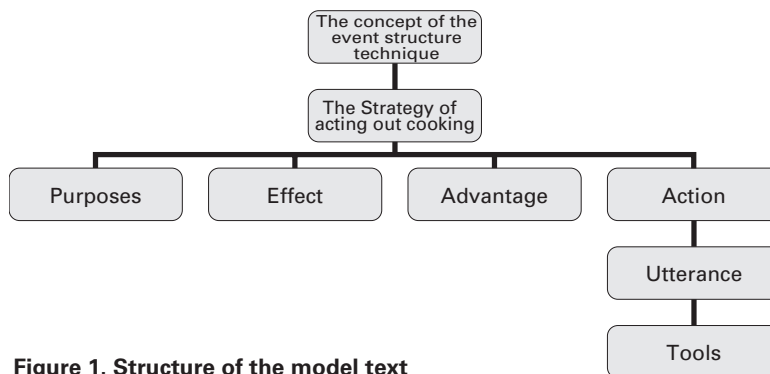In the *joint construction* stage, the students first com-

Figure 1. Structure of the model text

pleted a written conversation that mostly covered the content to be written in a report. I presented the following model text:

A: What event will you use?
B: I will use cooking breakfast.
A: What roles will you play?
B: We will play a mother and her child.
A: Why?
B: In order to teach "Will you..."
A: What will you say, for example?
B: For example, "Will you cut tomatoes?"
A: Give me another purpose.
B: To teach words for foods.
A: For instance?
B: For instance, "bread" and "butter."

I also provided the students with cues for making a conversation:

A	B
shopping for X food, clothes, sweets	eating at X restaurant, hamburger shop
clerk customer waiter/waitress	
"Do you have…" "I need…"	"Do you have…" "Could you…"
words for X the plural form	

The students chose and combined the cues and substituted them for the underlined parts of the model text. The cues consisted of two sets: set A in the left column and set B in the right column. The students made pairs, one of which used set A and the other set B.

After they had completed a written conversation, they

created a spoken conversation. I prepared this exercise so that the students could construct knowledge to be written in the report. Functional linguists point out that nominalization makes texts abstract, i.e., remote from daily life.[14] An advantage of the written conversation is that students can construct knowledge for the report without nominalization in theme.

2.4.2. Writing a report

Next, the students wrote a report using the model text and the above cues. For the purpose of instruction, I divided the model text into three parts: the first (sentences 1 to 4), the second (sentences 5 to 6), and the third (sentences 7 to 9). I taught them how to use the model text part by part as follows.

The students wrote using the first part of the model text, after which I copied one student's work onto the blackboard and the class discussed it. They then wrote based on the second part of the model text. I again copied a student's work on the board for class discussion. In discussing the first part, I taught skills (e.g. the use of nominalization and articles) and urged the students to apply those skills to the second part. At this stage, I explicitly taught nominalization in theme. I did not have time to teach how to use the third part of the model text. One student (hereafter student A) wrote the following report. The underlined parts come from the cues.

Event structure activities can be used as follows. First, the therapist can use <u>eating at a restaurant</u> to teach "<u>Do you have.</u>" The therapist and client play <u>a waiter and a customer</u> using toys. For example, the customer says, "<u>Do you have</u> green tea?" Second, <u>eating at a restaurant</u> helps teach <u>the plural form</u>, e.g., "salads" and "drinks." Third, it allows them to practice "<u>Could you</u>," e.g., "<u>Could you</u> bring a cup of coffee to my table?"

I am an English teacher, not a speech therapist. Therefore, there was a risk of giving inappropriate information through model texts and cues for writing. I eliminated that risk by adopting the cues and phrases in the model texts mostly from specialist books and by having the cues and model texts checked by a speech therapist.

2.5. Independent writing

At this stage, the students wrote a report on their own. I announced that, in marking their reports, I would give one point if they wrote an original strategy, i.e., a strate-

gy that was not cited in the source or model texts and did not use the cues. I also said that I would give them one point every time they used nominalization in theme. These points were used for calculating the final scores of this course. (I added up the scores that I gave each student on the five reports he or she wrote during the course; the maximum score for the reports was 20 points. The total score was used in his or her course score. The highest possible score for the entire coursework was 100 points.)

3. Results and Discussion

3.1. Student writing sample

Student A wrote the following report. I gave each sentence a number.

[1] Event structure activities can be used as follows. [2] First, a therapist can use attending a class at school to teach "Please...." [3] The therapist and the client play a teacher and a student using props, e.g., the student says, "Please teach me science." [4] Second, attending a class helps teach the plural form, e.g., "pencils" and "notes." [5] Also, it allows them to practice adjectives, e.g., "This classroom is tidy." [6] They can use toys, e.g., toy desks, to promote talk. [7] As a result of the therapy, the client may speak better in classes at school. [8] Attending a class is excellent because the child can practice it at school when the child goes to school.

Following the model text, she concretized her strategy (i.e., acting out a class) in terms of action, utterance, and tools (sentences 3, 5, and 6) while analyzing it in terms of purposes (sentences 2, 4, and 5), effect (sentence 7), and advantage (sentence 8). She also used nominalization in themes to thematize and analyze her strategy repeatedly (sentences 4, 5, and 8).

3.2. Questionnaire

During lesson 14, I conducted a questionnaire that asked in Japanese, *You wrote reports in this course. How useful do you think it will be for your future?* Twelve students answered *very useful*, 25 students *useful*, and four students *neutral*; no students answered *not useful* or *not useful at all*. This means that most students viewed the writing lessons as useful. The reasons included the following: *What we write can be applied in various ways; The writing is useful for devising methods; The writing is useful*

for writing a medical record; and *I will talk in a similar way when a foreign patient comes to my hospital* (translated from Japanese). The questionnaire suggests that the students' *instrumental motivation*, i.e., motivation to learn for practical purposes, was high, as mentioned under *Introduction* above.

3.3. Challenge and future action

A challenge in the method used for this study is that students' reports were not creative in content and structure. For example, in the above student's text, the structure is identical to that of the model text, while sentences 6, 7, and 8 are quite similar to the model text in content. In order to promote creativity, it may be helpful to employ a process approach to teaching writing in which students revise their reports trough discussion in order to create new ideas.

4. Conclusion

This paper presented a method for helping students write a report in English about how to apply a professional technique. The main characteristics of the method are as follows. First, the model text demonstrates a structure that concretizes and analyzes a technique from various angles, using nominalization in theme. Second, students complete a written conversation that covers the content to be written in a report. An advantage of a written conversation is that students can construct knowledge for the report without nominalization in theme. A third characteristic is that the teacher shows students how to use each part of the model text one by one, writing a student's work on the blackboard and discussing it with the class. An advantage of such small-step instruction is that the teacher can teach skills during the discussion of the first part and can encourage the students to use those skills for the second part. As a result of such instruction, each student's report concretizes and analyzes a technique, following the structure of the model text and using nominalization in theme.

This paper specifically discussed English lessons given to speech therapy students. However, the above method can be used for other majors in the medical field. For example, in my lesson, nursing students wrote about techniques for minimizing hospitalized children's loneliness. They presented their own techniques to decrease such loneliness (e.g., teaching a child to fold paper into figures to forget loneliness). They then analyzed the techniques in terms of effects (e.g., the child can talk with other patients about the figures) and advantages (e.g., the child will become dexterous). Thus, the above method has the potential to help students of various majors write about professional techniques.

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携帯用電子書籍端末(Amazon Kindle)は
若手医師の医学英語習得に有用か？
Medical English Education for Residents Using
Electro-Book Device

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滋賀医科大学では医学部学生や大学院生に対して医学英語の講義を行っているが[1]，本学附属病院における臨床の現場において，若手医師の医学用語以外の英語を使用する頻度や，最新の医学情報を得るための英語の必要性が，年々低下している傾向にある。英語を使用する頻度や必要性が低下している原因として，(1)若手医師は，多忙であること，(2)近年，卒後十年程度の医師が著者である臨床の現場に即したわかりやすい日本語の医学書籍が多数出版されていること，(3)Google を代表とする日本語ネット検索エンジンの充実等があると我々は考える。

しかし，これらの若手医師の著作をみてみると参考文献のほとんどが代表的な英語の教科書だったり，英語の原著論文だったりする。また，日常の内科診療において，患者の予後の改善につながるような医療を行う第一歩は，患者が述べている病歴・症状・検査所見等から得た具体的な問題点を，より普遍的な上位の医学概念：医学的用語（semantic qualifier）に変換することが，正確な診断や的確な治療を行うために重要であるが[2]，現状では，英語のデータベースの方が検索の感度・特異度が高く[3]，また，症候によっては日本語がないものもあり[3]，やはり，医師にとって，患者の予後改善につながる診療を行うためには，医学英語の習得は必須だと我々は考える。そこで，今回，我々は，携帯用電子端末（personal digital assistant: PDA）[4] の一種である電子書籍端：Amazon Kindle[5] が，今後の若手医師の医学英語の習得に役立つと考えたので，その使用経験を紹介したい。

我々の使用経験から，Amazon Kindle（杉本は Kindle 3 free 3G WiFi を使用している）の特徴は，(1)米国のアマゾンのサイトからネットで購買し，数日で米国から届く，(2)充電すると，自分の米国 Amazon の口座が設定されておりすぐ Shop in Kindle store から，携帯電話用回線（3G 回線）を用いて，通信料は無料で，英語洋書が購読できる。医学洋書の contents は非常に多くそろえられており，印刷版より1割ほど低価格である（さらに，現在円高である）。(3) Tablet 型の PDA（iPad 等）と比較して片手で操作できる重量・サイズであり，かつ，電話回線をつながない状態で約1ヵ月充電不要で使用できる。(4)表示に電子ペーパーを用いており老眼の我々でも活字が判読しやすい，等があげられよう。

さらに，Amazon Kindle が医学英語習得に有効であると考えた根拠は，(1) 英語書籍を読む上で最大の問題点は，知らない単語に遭遇して辞書を引くことで，読むことが中断されることであるが（この中断が多忙な若手医師にとって英語の医学教科書を敬遠する最大の原因と我々は考える），Kindle は，単語にカーソルをあわせるだけで，内蔵されている英英辞書がひらいて意味を教えてくれることで，読むことが中断されない（医学専門用語を提示する医学辞書や純正ではないが Kindle で使用可能な英和辞書も我国で購読可能である）。(2) Text-to-Speech という機能があり，Kindle store から購入した洋書のテキストを読みあげる機能がついており，ヒアリング能力の向上に有効であり，かつ，ハンドフリーで読むことが可能である。(3) PDF ファイルも提示できるので，PC にダウンロードした PDF 化した医学英語論文を Kindle にとりこんで論文ファイルが作れる。こと

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等が挙げられる。

　また，Kindle の問題点として，(1) 白黒であること，(2) タッチパネルでないこと（スマートフォン等今現在の PDA のほとんどがタッチパネルであり，操作に違和感あり），(3) 海外製であり，すべて英語で操作しなければならい（英語習得には有利だが），(4) 検索機能が弱く，何か調べ物をしたい時必要な情報が取り出しづらいことや，以前読んだ内容を確認したいときすぐに戻れない（この点は，紙の印刷物が断然優れている），(5) 海外製のためか乱雑に扱うとすぐ壊れる（杉本の Kindle も購入 1 週間で壊れたが，米国アマゾンと e-mail を介した数回のやり取りで交換していただいた[6]。この点も英語習得に役立つであろう）等が挙げられる。よって，我々は，まず学生や若手医師が医学英語を習得するためには，症例をクイズ形式で本の最初から通読していく Case files シリーズ等[7]が，医学知識が得られて，かつ，医学英語の習得に繋がる有用なコンテンツではないかと考える。

　携帯性にすぐれた電子書籍端末が医学英語の習得に役立つのではないかと考え，我々の体験をまとめた。今後，このような電子書籍端末を若手医師と使用することで，若手医師の卒後教育の充実につなげていきたい。

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　日本大学医学部では医学英語教育を重視し，日本語の医学教育と連動した 6 年一貫の医学英語教育を行っている。具体的な到達目標としては，卒業時に全ての学生が (1) 英文の医学教科書を読める，(2) 英語で診察ができるという 2 つを設定している。

1. Medical English Faculty Member Details (Current as of September 26, 2011)

3 Full-time tenured positions
・Assistant Professor (T. Oshimi, MD)
・Research Assistant (E.H. Jego)
・Research Assistant (TBA)
Part-time positions
・Part-time lecturer (R. Turner)
・Temporary Part-time Lecturer (C. Noda)

　All instructors in the program are experts in EMP and have extensive experience in a wide range of areas within medical English communications including health care interpreting, editing medical papers, and medical translation.

2. Program Objectives

　The university has adopted the view that to adequately prepare students to be able effectively meet their future responsibilities, a comprehensive 6-year medical English curriculum is necessary. This program is focused on enabling students achieve two main objectives:
1. To be able to read a variety of medical texts in English
2. To be able to conduct medical interviews in English

2.1. A skills-based approach to learning

　Mastering English is achieved through actual application. Our program is designed to create a classroom environment in which students acquire English skills through its use. Among others, some of the key activities of the program include role-play, Dictogloss, and a variety of other interactive student-centered task-based activities based on a medical English word list developed in-house.

2.2. Practical medical English for enhanced communication

　Our students learn by considering the situations that require the use of each medical term, and their correct usage, in order to develop their knowledge into a practical communication tool. The phrases they learn are based on real-life interactions between patients and doctors from English-speaking countries. Students develop not only practical reading skills but they also develop essential listening and speaking skills that doctors need.

2.3. Extracurricular activities

　In addition to regular classes, students can also attend monthly medical English conversation seminars. In addition to students, attendees include doctors, nurses, health care interpreters and other members of the health care community. The seminars focus on roleplaying to encourage participants to practice expressions that are commonly used in doctor-patient encounters typically found in the United States Medical Licensing Examination Step 2 Clinical Skills. These seminars are held once a month. In addition, students and faculty as well as guests from outside can attend the

bi-annual Medical Writing Seminar hosted by the medical English faculty. This seminar focuses on the skills and techniques of writing academic papers in English.

2.4. Language use in the classroom

Most of the classes are conducted mainly in English. We incorporate a wide variety of games and activities to encourage active participation and foster an environment that is conducive to learning. Effectively creating this kind of positive environment is important for keeping motivation levels high.

3. English Education Integrated with Medical Education

The program complements other subjects that students study during each academic year. This alleviates the burden of academic overload and increases the ease with which students are able to read and understand medical texts in English and perform medical interviews in English by the time they graduate. For example, when students learn cardiology, they also learn useful phrases and expressions that relate directly to cardiology in their English classes. Students gain a better understanding of medical English through this simultaneous and integrated approach to teaching. Many of the class materials are developed in-house by the medical English faculty. Medical content is checked and supervised by a physician to ensure medical accuracy. The students have approximately 300 hours of formal English instruction throughout their 6 years of study.

· **1st year:** Medical terminology (60 students/class, 90 min/week) + Doctor-patient consultation (60 students/class, 90 min/week)
 = 84 hours/year
· **2nd year:** Medical terminology (60 students/class, 55 min/week) + Presentation & Explanation (30 students/class, 55 min/week) + Physical examination (30 students/class, 55 min/week) + Listening (60 students, 55 min/week)
 = 103 hours/year
· **3rd year:** Textbook reading (120 students/class, 55 min/week) + Doctor-patient consultation

(30-60 students/class, 55 min/week)
 = 48 hours/year
· **4th year:** Reading medical journals (120 students/class, 55 min/week) + Doctor- patient consultation (30-60 students/class, 55 min/week) (starting in 2012)
 = 48 hours/year
· **5th year:** Reading medical journals & oral case presentations at individual departments (4-6 students/class)
 = 13 hours/year
· **6th year:** Special medical terminology lectures (120 students/class)
 = 3 hours/year

Note: The total numbers of students/class are based on 2010-2011 school year and may change slightly year by year.

4. Evaluating Outcomes

At the end of each academic year, students respond to surveys regarding their medical interview skills, medical terminology retention, reading comprehension skills in medical contexts, listening comprehension skills in medical contexts, and the ability to explain medical concepts. Each year, these surveys, together with student results on an in-house examination of medical English proficiency, and other pertinent information are all used to carefully evaluate the program and identify where adjustments and improvements are needed. For example, in the past two years since the survey data was first collected, the program has been altered to include more reading activities as well as more speaking time in class. The survey data is an important source of feedback to help evaluate not only how students are perceiving their progress through the program, but also to help evaluate instructor performance.

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University of KinDAI Himeji
School of Nursing

近大姫路大学は，看護学部と教育学部の２学部を有した開学５年目の新しい大学である。看護学部は，国際看護と災害看護を重視しており，英語教育にも力を入れている。１年次に，必修３科目，選択２科目の英語科目が展開されている。前期は，英文法の復習，一般英語読解，映画によるリスニングを行い，学生の総合的な英語力向上を目指す。後期には，医学・看護英語に特化した英語読解，実践的な看護英会話の授業を行い，実践的な医学・看護英語力養成を目指している。

本学の場合，看護学部の英語として科目内容は充実していると思われるが，英語５科目全てが１年次に開講されるという，その開講年次に改善の余地がある。理想的には，多年次にわたって英語科目を展開し，高学年次に実践的な医学・看護英語を学べるようなカリキュラムが望ましい。しかし，本学では，共通教育科目としての英語という位置づけであるため，もう一方の学部である教育学部と連携しながら，カリキュラム改正を検討しなくてはならないため，改善にはまだ時間がかかるというのが現状である。

1. Name and Location. Type of Institution

The University of KinDAI Himeji is located in Himeji, Hyogo. It was established in 2007. It consists of two departments: the Nursing Department (School of Nursing) and the Education Department. The School of Nursing accepts 100 students each year, and about 400 students are currently enrolled.

2. Short Educational Outline

International Nursing and Disaster Nursing are important features of our university and great importance is attached to English education. We have been following the curriculum approved by the Ministry of Education since 2007 and are now in the process of planning a new curriculum. We are 1) reordering the subjects of basic medical science for nursing, and 2) integrating some of the nursing subjects.

3. English Teaching Environment

3.1. Affiliation

English courses are part of the general education curriculum.

3.2. Staff

A professor and a tenured associate professor in the School of Nursing are in charge of English education. A professor from the Education Department is teaching part-time. There is hardly any cooperation of field specialists with the teachers of English, but in one case a nursing teacher and an English teacher did some collaborative research to develope an English textbook.

3.3. Class size, times per week, etc

The 100 freshmen are divided into two classes of roughly 50 according to their scores in the English placement test. We have three required English courses (English I, II, and IV) and two elective courses (English III and V). In each semester, the students have to take two required English courses.

All five English courses are offered only for the first year students.

4. Contents of the English Courses

4.1. English courses in the present curriculum

・**English I** (1st year only. Required. 90 minutes/ week ×30 sessions)
This course aims to improve the students' reading and listening skills using general English reading material.

・**English II** (1st year only. Required. 90 minutes/

week ×15 sessions)

This course aims to review English grammar to help the students read English material.

· **English III** (1st year only. Elective. 90 minutes/week ×15 sessions)

This course aims to improve the students' listening skills and to teach colloquial English expressions by listening to and watching films in English.

· **English IV** (1st year only. Required. 90 minutes/week ×15 sessions)

This course aims to enrich the students' knowledge of medical English terminology and expressions by reading material on medical topics such as novels written by writers in the medical professions. Medical English terminology and expressions are intensively taught using a medical English word book.

· **English V** (1st year only. Elective. 90 minutes/ week ×15 sessions)

This course aims to familiarize the students with nursing conversations. In each session, the students watch/ listen to nurse-patient dialogues on various situations such as 'Helping patients eat', 'Taking vital signs' or 'Drawing a blood sample'. The students practice the conversation intensively. The final project for this course is a role play for which the students write scenarios and which they perform. English expressions for disaster nursing are also learned and practiced.

4.2. Evaluation of English courses in the present curriculum

Even though we offer no less than five English courses, students fail to improve their practical language skills as could have been expected. This might be because all the English courses are required only during the freshman year, and for many of the students, that is too much to digest. No English courses are offered after the freshman year, and the students forget their English by the time they graduate. Another problem of the present curriculum is that three out of the five English courses are required, thus

Students preparing for an English presentation

classes are always too big and students are less enthusiastic and less motivated. We need to enable the students who wish to study English and wish to use it after graduation to continue to learn English throughout the four years of college.

5. Conclusion

Our students' level of English and their interests are diverse. Some students need very basic instruction and others wish to do more advanced learning. We hope our program with the variety of English courses from basic to advanced level satisfy the needs of our students and allow them to improve their English.

English education is regarded as liberal arts program in our university, and any changes to the English curriculum needs to be made in accordance with the Education Department of the university. We hope that, in the coming years we shall be able to plan a new, improved English curriculum together with the Education Department.

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Writing Tips

What belongs Where?

Reuben M. Gerling

A constant irritant to readers of medical papers is repetition. True enough, readers do not usually read a whole paper, they search on the Internet, find a title of interest, read (perhaps) the abstract; end of exercise.

However, in the event of someone reading the whole paper, this is done to a purpose, few actually enjoy the exercise. Besides the language, repetition tends to present an unfortunate feature of all too many medical publications. Funny that, really, as the most common argument for rejections is that there is not enough space (not in the JMEE, keep those manuscripts coming!).

Following our good, old friend IMRAD (Introduction, Methods, Results And Discussion), we need to caution all those we teach that what you write in one, you do not repeat in the other. IMRAD, however, has no abstract, the addition of which will make the correct acronym AIM-RAD.

Writing too much where only a little is needed is a problem. The following, for example, forms part of an abstract:

> 'Experimental models of atherosclerosis suggest that recruitment of monocytes into plaques drives the progression of this chronic inflammatory condition. Cholesterol-lowering therapy leads to plaque stabilization or regression in human atherosclerosis, characterized by reduced macrophage content, but the mechanisms that underlie this reduction are incompletely understood. Mice lacking the gene Apoe (Apoe-/- mice) have high levels of cholesterol and spontaneously develop atherosclerotic lesions'. (*J Clin Invest* 2011 May 2; **121** (5): 2025-2036);

This could be part of the introduction, it is certainly too long and detailed for the abstract.

The authors of one paper write in the AIMS section of their abstract:

> 'Preservation of renal function in children with congenital neurogenic bladder is an important goal of treatment for the disease. This study analyzed the **evolution of renal function** in patients with congenital neurogenic bladder.' (*Clinics* (*Sao Paulo*) 2011 February; **66** (2): 189-195.)

Then, at the end of the Introduction they write:

> 'The aim of this study was to evaluate the evolution of glomerular and tubular renal function in patients with congenital neurogenic bladder treated by pediatric nephrologists, **identifying factors related to worsening of renal function in order to suggest treatment modifica-**

tions.'

Is analyzing the evolution of a condition the same as identifying factors and suggesting treatment modifications?

The introduction should relate to the abstract and expand on it, not set new premises. If the two are the same, better relate to the original and expand.

The role of the abstract is to give a brief overview of the contents of the whole work. It needs to be inclusive, but not overly detailed as this will prevent the readers from going to the paper itself. The principle of good paper writing is: the title shows what it is about (should I bother?), the abstract gives an overview (how relevant is this to me?) the methods and results show what was done (what did they do and what data, results did they come up with?) and the introduction and discussion give the background and relevance of the work (where does this belong? Why is it important?)

The only place where repetition can be justified is in the discussion. An author may feel that by taking some of the results and explaining their significance, relevance can be proved. Other than that, whet the appetite in the abstract and leave the details for the main dish. As for the sweet, well, that comes in the end.

The story of the present simple.

The present simple in English is used to describe what is habitual or always true. Thus, 'we feed our mice four times a day,' will tell the reader that it happens every day.

In writing, the present simple should be used when referring to works that were published but are still relevant: 'Bush et al. **convey** the best way to destroy the world economy'. 'In their paper, Czar Alexander and colleagues **explain** how these novel sutures are used'. So use the present simple whenever referring to works that are of relevance, the vast majority of references. The past, on the other hand, is used with works that are of historical interest only and bear no scientific relevance any more.

Editor's Perspectives
Following the Quake

The devastating tsunami of March 11 left much of north-eastern Japan in ruins. The disaster wrought by the Tokyo Electric Power Company added to the already overwhelming hardships faced by the residents of the affected areas. Some JASMEE members who live and work in those areas saw the damage first-hand and, no doubt, are still feeling the consequences. We sympathize with those of our members who reside in these areas and send our deepest condolences to those who have lost loved ones in the disaster.

In light of the disaster it was no easy matter to convene this year's conference, indeed there were plans to cancel it. However, thanks to the initiative and hard work of Professor Yoshioka, the conference went ahead as planned and was a resounding success. We have shown that, albeit small, we continue to operate and as part of our work will do what we can to help in healing the deep wounds Japan has suffered.

Starting in the July of this year, the second issue of the journal was changed to the conference issue. The July copy had in it all the related information, schedules and abstracts. This format will continue, with the chair of the conference acting as the guest editor for the conference issue. We look forward to working with Professor Ando in that capacity and hope that next year's conference will prove as successful as this year's, albeit without another major earthquake.

Our members are aware that we have an agreement with *The* Write *Stuff*, the journal of the European Medical Writers' Association. As of the March of next year it will have a new name, *Medical Writing* (MEW) and will be published by Maney. Our agreement, which allows either journal to publish the other's articles and papers will remain unchanged.

Reuben M. Gerling

How to submit papers to the *Journal of Medical English Education*

The Journal of Medical English Education welcomes well written, innovative papers on a wide range of subjects that relate to medical English and its teaching.

Prospective authors should consult first the Guidelines for Authors, which appears on every 1st issue and are available online at <http://www.medicalview.co.jp/jmee/index.shtlm> to ascertain that their work conforms to the format approved by the journal. The complete papers can be sent to the editorial offices at <jasmee@ medicalview.co.jp>. A submission consent form, available at the end of each issue of the journal, should be completed and signed by the authors and sent by mail to the editorial offices at <The Journal of Medical English Education, Medical View, 2-30 Ichigaya-hommuracho, Shinjuku-ku, Tokyo 162-0845, Japan>. No submission will be published without the receipt of a completed and signed consent form.

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