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第18回 日本医学英語教育学会 学術集会 開催案内

日本医学英語教育学会は1988年に第1回医学英語教育研究会が開催され，その後，医学英語に関する研究を推進し，医学英語教育の向上を図る目的で学会として発展して参りました。現在では400名以上に及ぶ会員を有しております。

医学英語教育は卒前・卒後・生涯教育として重要であり，医療の国際化，医師国家試験の英語問題導入や医学英語検定試験など，専門職教育の限られた時間でどのように教育を行うかが課題です。学術集会では例年，医療系の英語教育に係わる教員･研究者・医療関係者が参加し研究･事例を報告します。平成27年度学術集会は下記により開催します。日本医学教育学会の委員会に起源をもつ本会に是非ご参加いただき，医学英語教育について情報を交換していただければと思います。

記

学会名：第18回医学英語教育学会学術集会

日　時：平成27年7月18日（土）～19日（日）

会　長：伊達　勲（岡山大学大学院 脳神経外科）

会　場：岡山コンベンションセンター（〒700-0024　岡山県岡山市北区駅元町14-1）

演題募集：平成27年2月1日正午～4月19日 正午

（医学英語教育の目標・教育方法・評価，学生評価，語学教育と専門教育の統合，実践力教育，グローバル人材育成，医学・看護学・医療系教育における医学英語教育，英語教員による医学英語教育，医学・看護学・医療系教育者による医学英語教育，医学英語教育におけるシミュレーション教育・ICT活用，教員教育能力開発，医学英語論文指導・校閲・編集，医学論文作成における倫理，国際学会でのスライド作成と発表法，USMLE受験指導，医療通訳，医学英語検定試験，その他の医学英語教育に関連する演題）

＊英語･日本語のどちらでも発表できます。学会ホームページよりご登録ください。

＊詳細は学会ホームページをご参照ください。

＊学会ホームページ：http://www.medicalview.co.jp/JASMEE/gakujutu.shtml

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Second Announcement

The 18th Annual Conference of the Japan Society for Medical English Education

The Japan Society for Medical English Education (JASMEE) held its first meeting as a 'study group' in 1988. Since then, the society has continued to grow in promoting the development of medical English education, supported by over 400 members.

Medical English education has become a significant part of basic, postgraduate and continuing education. With the globalization of medicine and recent changes, such as the introduction of the Examination of Proficiency in English for Medical Purposes (EPEMP), JASMEE has extended its activities in ways that contribute to society.

The 18th JASMEE academic meeting will include plenary lectures, educational lectures, oral presentations, and symposia workshops. We welcome submissions on various topics related to medical English education such as: educational methods, assessment, student evaluation, integration of language education and specialized education, medical English for nursing and other healthcare related fields, medical English editing, teaching of medical writing, EPEMP, etc.

Date: July 18 (Saturday) to July 19 (Sunday), 2015
Venue: Okayama Convention Center
14-1 Ekimotomachi, Kitaku, Okayama
President: Isao Date
(Neurosurgery, Okayama University School of Medicine)

Call for papers: Proposals for papers on the following subjects should be submitted by the 19th of April, 2015.

- goals, methods, and assessment of medical English education
- student evaluation
- integration of language education and specialized education
- global human resource development
- medical English for nursing and other healthcare-related fields
- ICT/simulation education for EMP
- faculty development
- teaching of medical writing
- medical English editing
- how to make slides and give presentations at international meetings
- USMLE preparation
- medical interpretation
- EPEMP, etc.

All submissions should be made online. Only submissions by members in good standing of JASMEE can be accepted.

Registration: Please access the JASMEE homepage for details.

URL: http://www.medicalview.co.jp/JASMEE/gakujutu.shtml

For inquiries, please contact: The JASMEE Secretariat (c/o Medical View, Attn: Mr. Eguchi)
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Journal of Medical English Education

The official journal of the Japan Society for Medical English Education

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Editor's perspectives

Bumper issues

As you will have noticed, this bumper issue of JMEE – all 72 pages of it – comes to you with a brand-new cover design. This was created by Mr. Junji Eguchi and his indefatigable team at Medical View, and was approved after long discussion and a few tweaks by the editorial board. The previous design had many admirers, of course, not least among the members of the editorial board. However, the black background, bold and striking as it was, had been criticised by several JASMEE members for highlighting their fingerprints. We hope this problem has now been eliminated and that the new design will meet with the approval not only of those readers who have sweaty fingers but also of the JMEE readership in general!

I am grateful to the new and previous chairs of JASMEE for sharing a few thoughts with us in this issue. Both the new chair, Professor Isao Date, and his predecessor, Professor Shigeru Nishizawa, give prominence in their messages to JASMEE's Examination of Proficiency in English for Medical Purposes (EPEMP), and it is indeed noteworthy that we will be accepting the first candidates for the Level 1 examination this summer. I know that all of those JASMEE members involved in producing and administering the four levels of EPEMP are keen to increase the number of people taking the exams, and all of us on the JASMEE board would like to encourage members to publicise not only EPEMP but also JAMSEE's activities in general. These include the series of biennial seminars on medical English writing that have been running for the last three years. With all lecturers drawn from the JASMEE membership, these seminars offer valuable training to Japanese medics engaged in the demanding task of reporting their research to the world. Information about all of JASMEE's activities can be found on our website: http://www.medicalview.co.jp/JASMEE/.

This issue also contains highlights from the 17th JASMEE Academic Meeting, held last summer in Ochanomizu under Professor Tsukimaro Nishimura's expert leadership. As my predecessor, Professor Reuben Gerling, announced at this conference, the October 2015 issue of JMEE will be devoted to articles on extracurricular activities. All engaged in teaching English for Medical Purposes are cordially invited to let us know about the opportunities they are offering their students or colleagues to improve their English proficiency in medical settings. We are already accepting contributions to the October issue, which will, I hope, be another bumper one.

T.D. Minton
Editor-in-Chief
Journal of Medical English Education

Chairman's message

*Journal of Medical English Education*に期待する

2014年7月に日本医学英語教育学会(JASMEE)の理事長に就任しました。本学会の特長の一つが医学英語教育に関する重要な情報を提供する本誌の発行です。私はかつて本学会に入会した際に，年に数回郵送されてくる本誌を読んで，医学英語教育に取り組む一人として大変感激したのをよく覚えています。医学英語教育を行う者にとっても，受ける者にとっても多くのアイデアを各論文から得ることができます。年次学術集会で発表されたプレゼンテーションを基にした論文も多く，それが年次学術集会に参加する動機の一つにもなりました。

編集委員長のMinton先生は，前任のGerling先生を引き継いで本誌の編集委員会を組織されました。すでに新しい組織の下で本誌の発行が始まっています。2年に一度の特別号(特集号)の発行も企画され，次回は「課外活動としての医学英語教育」がとりあげられます。また，表紙のデザインも一新されています。会員の皆さんが手に取ると新しい風を感じることができるでしょう。

本誌には，年次学術集会，日本医学英語検定試験(医英検)，医学英語教育ガイドライン，医学論文トレーニングセミナー等，JASMEEが取り組んでいる重要な活動に関する情報が満載されています。医英検は2，3，4級試験に引き続き，2015年に1級試験を開始します。これまで全国で約2000名の方が医英検を受験していますが，いよいよ1級試験を行うことで医英検が完成形となります。医学英語教育ガイドラインの作成に関連して，学会として「改訂版　講義録　医学英語Ⅰ～Ⅲ」，「論文の書き方」「口頭発表の仕方」などの書籍の発行を計画しています。また，トレーニングセミナーでは医学論文だけでなく，医学生や研修医を対象とした海外臨床実習のトレーニングセミナーも実施します。

今後も本誌が，会員の皆さんに医学英語教育に関する実践的なアイデアを供給する場であり，またJASMEEの活動の重要な情報源であり続けることを期待しています。

日本医学英語教育学会

理事長　**伊達　勲**

Chairman's message

My Expectations of *Journal of Medical English Education*

I was appointed executive chair of the Japan Society for Medical English Education (JASMEE) in July 2014. Part of the work of the society is publishing the *Journal of Medical English Education (JMEE)*, which offers important information relating to medical English education. I remember how impressed I was by the *JMEE*, which was sent to me several times a year after I had joined JASMEE. The articles in the *JMEE* provide useful ideas both to teachers and to students of medical English. The *JMEE* has a lot of papers based on presentations at the annual JASMEE conferences, which motivated me to participate in the conferences.

Professor Timothy D. Minton, taking over as editor-in-chief from Professor Reuben M. Gerling, introduced new members to the *JMEE* editorial committee. Publication is now under the new editorship. It will include publishing a special issue once every two years. The topic of the first special issue will be "EMP in extracurricular activities." At the same time, the cover of the journal is being redesigned. I hope readers will enjoy the fresh new look.

Each *JMEE* issue has information on important activities of JASMEE, such as the annual JASMEE conference, the Examination of Proficiency in English for Medical Purposes (EPEMP), EMP guidelines and training seminars for writing medical papers in English. In addition to the examinations for levels 2, 3, and 4 that are already in operation, EPEMP will start a level 1 examination in 2015. About 2,000 people have taken the tests so far. With the level 1 examination the EPEMP will be covering all proficiency levels. Our plans for the future include the publication of a revised version of the *Textbook of English for Medical Purposes* (3 vols.) and books such as *How to Write Medical Papers* and *Oral Presentations in Medical English*, all based on JASMEE activities related to the making of EMP guidelines. We are also planning to add the present training seminars for the writing of medical papers, seminars for overseas clinical clerkships targeted at medical students and interns.

I hope the *JMEE* will continue to provide practical ideas for our members and be an essential source of information on the activities of JASMEE.

Isao Date, Executive Chair

Japan Society for Medical English Education

Greetings from the former chair

ご挨拶

産業医科大学 脳神経外科の西澤 茂 です。昨年(2014年7月)に日本医学英語教育学会の理事長を退任致しました。在任中は会員の皆様に大変お世話になりましたので，お礼のご挨拶をさせていただきます。

日本医学英語教育学会は浜松医科大学脳神経外科前教授　植村研一先生が発足され，1988年に第1回学術集会が浜松で開催されました(当時は研究会)。本学会は医学部，医科大学，医療系大学で英語教育を担当する英語教官と医師からなるきわめてユニークな学会です。思いは同じ，いかにして卒前・卒後の学生，医療職従事者にどのようにして効果的に医学英語を教育し，世界に通じる医療人を育てるか，ということにあります。植村研一初代理事長，大井静雄2代目理事長というこの分野におけるスーパースターのリーダーシップで会員数も増え，研究会から学会へと順調に育って行きました。念願だった学会主催の「日本医学英語検定試験3・4級」も開始になりました。

私は2005年に会長として第8回の本学会を主催させていただきましたが，その翌年に前任地の浜松医科大学から北九州市の産業医科大学に赴任することになり，教室作りに奔走してしばらく本学会出席から遠ざかっておりました。久しぶりに2009年の福島での学会に参加させていただいたときに，理事会・学会はその運営方針をめぐって少しぎくしゃくした雰囲気となっており，その後大井静雄理事長が任期を1年残し退任されました。その後の学会運営をはからずも私が引き受けさせていただくことになりました。お二人のスーパースターのあと，私のようなものに何ができるのと随分悩んだものでしたが，理事・評議員・会員の皆さんは本学会が目指さなければならない方向性をしっかり把握されており，その思いにのせていただき，学会の運営にたずさわってまいりました。

目指すは「日本医学英語検定試験2級」の実施です。また健全な学会運営を行うために会員数を増やし，地域での施設受験を可能にすることを目標に理事・評議員の皆さんと解決策を相談してきました。幸い，2級試験の実施にこぎ着けることができ，また施設受験も数を増やすことができました。私は，次期の3年間とあわせ，計4年間理事長を務めさせていただきました。この間私自身，いろいろ勉強させていただきました。はじめに目標とした懸案事項に少しでも解決の糸口が見いだせたことはすべて理事・評議員・会員の皆様の暖かいご支援のおかげです。深く感謝申し上げます。

2014年の7月に岡山大学医学部脳神経外科教授 伊達 勲 先生が新理事長に就任されました。早速敏腕を発揮され，1級検定試験も間もなく可能になりそうですし，3・4級検定試験の施設受験会場も飛躍的に伸びました。これから益々学会が発展していくものと楽しみにしております。

今後も理事の一人として，学会の発展に少しでも貢献したいと思っております。この4年間，暖かい，また寛容なご支援をいただき，すべての会員の皆様に感謝申し上げます。ありがとうございました。

2015年1月

産業医科大学 脳神経外科

西澤　茂

Greetings from the former chair

January 2015

After serving as executive chair of the Japan Society for Medical English Education (JASMEE), my term ended in July 2014. I would like to express my thanks to all the JASMEE members for their support during my chairmanship.

After its founding by Professor Kenichi Uemura, a former professor of neurosurgery at Hamamatsu University School of Medicine, JASMEE held its first conference in 1988 in Hamamatsu. JASMEE is a very distinctive academic society, whose members comprise English teachers in university departments of medicine, medical schools, and schools for medical professionals, as well as practicing physicians. The members' common wish is to effectively teach medical English to students, graduates and medical professionals, and to foster medical professionals who can function internationally. As JASMEE increased its membership, the original research group steadily developed into an established academic society under the leadership of two superstars in this field, Kenichi Uemura and Shizuo Oi, who worked as the first and second executive chairs of JASMEE.

I had the honor of presiding over the eighth JASMEE annual conference in 2005. In 2006, I left Hamamatsu University School of Medicine and joined the University of Occupational and Environmental Health, Kita-Kyushu. As I was busy establishing a new program, I was forced to miss several annual conferences. When, after a long absence, I participated in the annual conference in 2009, the executive board and the society were not exactly working in harmony. After Professor Oi resigned as executive chair, I accepted the role of managing the society, which was a totally unexpected development for me. Following two such illustrious predecessors, I wondered about the amount of work I could handle, but the council members, executive board members, and other JASMEE members helped me in doing what was necessary to lead the society in an efficient manner.

Our objective was to establish a level 2 in the Examination of Proficiency in English for Medical Purposes (EPEMP). I made efforts to increase the number of members to support the sound administration of the society and to make it possible to take the EPEMP at local facilities, with the help of council members and executive board members. Fortunately, we successfully implemented the first level 2 exam of the EPEMP and were able to increase the number of applicants who took this exam at local facilities. I served as executive chair for four years, including the next three-year term. These years were a wonderful learning experience for me. I am grateful to the council members, executive board members, and other JASMEE members for helping me find solutions to the many challenges JASMEE had to tackle. Thank you very much.

Professor Isao Date of the Department of Neurosurgery, Okayama University Medical School, was appointed executive chair in July 2014. He has immediately shown himself to be an immensely competent leader, making it possible to introduce a level 1 EPEMP very soon and boosting the number of exam sites for levels 3 and 4. I look forward to witnessing the further development of JASMEE.

Moving forward, I hope to contribute to the development of JASMEE as a member of the executive board. My deepest thanks go to all JASMEE members. Thank you very much for your generous support during the past four years.

Shigeru Nishizawa
Department of Neurosurgery
University of Occupational and Environmental Health

Volunteering as an aid to better EMP teaching: My experience as a hospital interpreter

Thomas Mayers
Medical English Communications Center, Faculty of Medicine, University of Tsukuba

This report introduces hospital interpreting as an example of how the volunteer sector can provide the English for Medical Purposes (EMP) instructor with unique opportunities for professional development. I will demonstrate how hospital volunteer work can give the EMP instructor firsthand access to the clinical settings in which medical consultations, involving profession-specific communication skills and medical vocabulary, are used daily. As the volunteer experiences the hospital from the perspectives of both the medical professional and the patient, and is therefore positioned to have a positive impact on patient healthcare and wellbeing, this report discusses some ways in which hospital volunteer work can lead the EMP instructor to a fuller understanding of the subject matter of EMP and thereby positively impact his or her teaching.

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Keywords English for Medical Purposes, hospital volunteer, professional development, interpretation, workplace English

1. Introduction

At the heart of the University of Tsukuba's medical complex is the university hospital. Having a hospital next door to one's workplace can serve as a profound advantage for anyone involved in teaching EMP, as being able to witness the day-to-day life of the hospital provides a practical window into the actual world of medicine for which our students are being trained.

Gaining experience in the hospital setting has been a particular concern of mine, since I come from a professional background in education rather than in medicine. For the non-healthcare professional like me the door to the clinical side of the hospital might initially seem firmly closed. There is no obvious place for an English teacher in the consultation rooms or on the wards of a Japanese hospital.

For the EMP instructor, occasions for professional development usually take place outside of the hospital, at conferences, seminars, and in carrying out research. As a newly appointed EMP instructor, however, I came to the conclusion that avoiding personal contact with the hospital would be a wasted opportunity. Therefore I began volunteer work as a means of personally engaging with the hospital. This report will describe one of my volunteer activities: hospital interpreting. I will explain how this kind of activity can not only have a positive impact on the lives of patients, but also have an equally positive impact on teaching and thus be an effective way to gain practical career-related experience for the EMP instructor.

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2. The roles of hospital volunteers

Volunteers take on a number of different roles within the hospital. Volunteers in these various roles help to provide holistic care for patients by complementing the work of the paid hospital personnel and contributing to the hospital's goals.[1] Mellow, in her research on hospital volunteers, places them into four categories: 1) direct service volunteers, 2) indirect service volunteers, 3) revenue service volunteers, and 4) community-based volunteers.[2] This paper deals with hospital interpreting, which falls into the first category, as it is an activity that puts the interpreter in regular contact with inpatients, outpatients, and family members. However, all four categories of volunteering are equally important components of the voluntary sector of the healthcare sys-

tem.

Some recent articles have highlighted the many benefits of volunteering. An article, published in *The Guardian* in 2013, mentions "…extensive evidence of the health and social benefits to patients, communities and volunteers from volunteering."[3] Alongside such health and social benefits, the EMP instructor volunteering in a hospital can also encounter unique professional development opportunities. Mellow discovered that half of the male volunteers working in a hospital's emergency department "were medical students or training to be paramedics, and this volunteer placement was a way of gaining career-related experience."[1] EMP instructors can likewise legitimately benefit from the career-related experience that volunteering offers and, at the same time, contribute to the work of the hospital. In this report, I will give some examples of how this has taken place within my own volunteer praxis.

3. An introduction to hospital interpreting: The University of Tsukuba

Tsukuba Science City has a very international demographic. Being home to numerous educational facilities and over 250 national and private research institutes, it attracts researchers and students from all over the world. Tsukuba City currently contains about 7000 foreign residents (3.5% of the population) from over 120 different countries.[3] There is, therefore, a demand for healthcare services to offer support in foreign languages to non-Japanese speakers. To meet this need, the University of Tsukuba Hospital has established an interpreting service for its outpatients and inpatients during consultations and examinations, which became a formal service in 2009. Currently, interpretation services for the following languages are provided: English, Chinese, Korean, Russian, Tagalog, Spanish, Portuguese, French, German, and Arabic,[4] with about 10 hospital consultations per month requiring the services of an interpreter. There are currently 115 people registered as interpreters: 9 staff members from within the university and 106 from the general public. According to the coordinator, however, there are only about 10 people who can be readily called upon to act as interpreters. Most of the interpreters are Japanese nationals, but there are also some of other nationalities registered, such as Chinese, Koreans, Brazilians, and from the Philippines. The participation of the voluntary sector is thus instrumental in enabling the hospital to offer interpretation services for its patients in such a wide range of languages.

When I first approached the hospital about volunteering, I was unaware of this particular service or of the hospital's need for interpreters and was asked by the coordinator if I would participate. As a nonnative-Japanese speaker, volunteering as a hospital interpreter obviously requires a certain level of proficiency and confidence in Japanese. I initially had some reservations about taking on this role. In particular, I was daunted by the medical terminology in Japanese and also by the responsibility of interpreting in medical situations.

Although I still find interpreting to be a daunting task, over time and with practice, I have found that it becomes easier the more familiar I become with medical terms in Japanese and the medical conditions of the patients. While interpreting, I almost always encounter unfamiliar terms and jargon and therefore have to carry a medical dictionary to every consultation. I also take a notebook and pen to make a note of new vocabulary. I occasionally also have to ask the medical staff to repeat any sentences or words that I cannot understand or need to clarify. I find both the medical staff and patients to be very patient with me on this point, and actually appreciate the care and time taken to be provided with an accurate interpretation.

4. Being a member of the healthcare team

Volunteering opened up the door to the clinical practice of the hospital that I had thought to be closed to outsiders. Volunteering made me an insider and a small part of the healthcare team, which in turn has helped me to more intimately understand the day-to-day life of the hospital.

To illustrate this point from my own experience, I have interpreted on numerous occasions for diabetes mellitus patients. In a typical visit, the diabetes patient will usually talk to various healthcare professionals: dieticians, nurses, doctors, and administrative staff, requiring a wide-ranging vocabulary. From this experience I have been able to develop a sufficient working vocabulary for diabetes consultations and have also become more familiar with this disease and its treatment. I have also become familiar with the hospital's endocrinologists, dieticians, and specialist nurses.

At the University of Tsukuba Hospital, the same interpreter will generally be used for all of a particular patient's consultations. The interpreting session may involve waiting with that patient in the waiting room, at the bedside before the consultation, or even being with them through a test or procedure (for example, I once interpreted for a patient undergoing a colonoscopy). An interpreter therefore becomes familiar with particular patients and their conditions. This familiarity makes interpreting sessions easier and

also brings reassurance to the patient.

The interpreter can thus also play a supportive role for a patient. The interpreter will directly experience the patient's questions, concerns, and anguish. For foreign patients, requiring medical care away from their home country can often be very distressing and the interpreter can help to ease this distress. For example, I once interpreted for nursing staff as they explained to their patient about how to change a colostomy bag. The patient later wrote to thank me for being with him on that particular occasion. He expressed that he had been harboring a deep sense of shame about the colostomy and that my interpreting and presence during that particular session had helped to remove that feeling of shame.

5. Understanding the perspective of the patient

Observing the hospital through the eyes of the patient can be a very informative experience. For example, seeing the effects that a doctor's words and body language has on a patient has invaluably informed my understanding of the subtleties of medical communication skills. Hospital interpreting has given me unique opportunities to witness such real-life medical interactions on a regular basis.

From this experience I have learned to encourage medical students to consider the patient's perspective. This has consequently encouraged me to study patient-centered care more deeply and has led to a better understanding of my role as an EMP instructor. Furthermore, as an interpreter I have felt a strong sense of fulfillment by helping patients through difficult times. This has probably been the most rewarding part of being a volunteer interpreter although it can also sometimes be emotionally distressing.

Perhaps the most daunting *and* moving experience I have had as an interpreter thus far, was being asked to interpret at a consultation between a doctor and his cancer patient. In this consultation, the doctor had to inform the patient that he had tried every available treatment and that there was nothing more he could do. In preparation for this consultation, I met with the doctor beforehand to review the patient's medical history and to discuss the doctor's plan for the consultation. I was able to take some time to study the English and Japanese vocabulary related to the disease and its treatment, and also research techniques for breaking bad news to patients. This preparation helped me considerably during this difficult and emotional consultation, enabling me to facilitate the conversation more professionally between the doctor and his patient without drawing attention to myself as the interpreter.

The following month, when I was teaching a class of doctors, the conversation turned to truth-telling and breaking bad news to patients. The experience with the cancer patient enabled me to better sympathize with the doctors, who very often find themselves in such difficult situations. This sense was reinforced three months later as I interpreted for the same patient's family at his bedside in the ICU.

6. The cultural dimension

One interesting aspect of hospital interpreting that I often encounter is meeting patients of different cultural backgrounds and experiencing the manner in which that culture relates to medicine and healthcare. For example, a recently diagnosed diabetes patient was concerned about observing Ramadan while keeping the strict dietary and insulin regimen necessary for managing her condition. When the patient brought up this issue with the doctor, it was apparent that this was something that the doctor had not considered, perhaps since it is not a common issue in a Japanese context. The doctor very carefully asked for exact details of the patient's typical activities of daily life during Ramadan and subsequently gave appropriate directions regarding insulin use and diet. On behalf of the patient, I also did some follow-up research in medical journals and found some articles on this subject written by Muslim doctors. This gave the patient a perspective on this issue from within the traditions of her own faith, which served to reinforce the advice given by her Japanese doctor.

In another case, a female patient seemingly refused to follow healthcare advice from the medical staff regarding weight loss, exercise, and diet. She was especially dismissive of advice given by the nurse. The patient's lack of will to be proactive in managing her condition was clearly frustrating and disappointing for the medical staff. Many of the complicating factors in this patient's case appeared to arise from cultural factors, such as a tradition of high-fat, high-salt diet, of which her dietician was well aware. Yet other, less obvious, cultural factors also appeared to play critical roles, particularly the traditional gender roles of a woman within her society, a factor I later discovered in a search of medical literature on similar cases, and was something that I had not considered previously. Encountering such differences in cultural attitudes towards medicine has broadened my concept of what interpretation actually involves. Interpretation is not a purely linguistic task — it is also a cultural one.

7. Hospital interpreting and EMP teaching

As I have suggested in this report, volunteering as a hospital interpreter has had a profound influence on my work as an EMP instructor and a very positive general impact on my teaching. I have found it to be a very effective way to become more informed about both the surrounding contexts and the subject matter of EMP. Volunteering as an interpreter has helped me to bridge the gap between the clinical practice of the hospital and the EMP classroom. It has made me a participating member of the healthcare team and, as such, has allowed me to witness firsthand examples of the numerous medical dialogs that I teach my students. This experience has fed back into my classroom, invaluably informing my teaching. It has helped me to build a foundation of firsthand clinical experience from which I have drawn confidence as a teacher of the subject.

My previously mentioned work interpreting for a diabetes patient illustrates this point, as it brought me many detailed clinical insights and a deeper understanding of the disease and its treatment. These insights have enabled me to more accurately plan and teach realistic lessons on doctor-patient consultations for diabetes and its related symptoms and complications. It is very satisfying as a teacher to know that in the limited time I have with students in the English classroom I can provide them with a realistic and practical medical English education.

Meeting regularly with patients has been another way in which interpreting has helped with my EMP teaching. Alongside the many benefits that this aspect of volunteering brings, working with patients has given me a wealth of background knowledge for simulating the role of a patient. I often participate in workshops for medical history taking as an instructor and sometimes as a simulated patient. In such classes my volunteering experiences have enabled me to better offer advice to students on patient-doctor interactions.

As an EMP instructor I have also found insights into the cultural influences on healthcare useful when working with classes of more advanced learners. In such classes, discussions occasionally lead to considering how ethical, religious, and other cultural factors might make a significant difference to decisions regarding the course of treatment for patients. Because the relative homogeneity of Japanese society might not allow Japanese medical students to often contemplate such issues, I would consider it an important element for training in international or cross-cultural awareness. This is something that I would like to develop further in my teaching.

8. Summary

In this report I have introduced hospital interpretation as an example of how an EMP instructor might begin to engage with a hospital through the voluntary sector and also highlighted the mutual benefits of participating in this valuable service. Acting as a hospital interpreter has brought me in close contact with the affiliated hospital and allowed me to participate in the clinical encounters that I teach students in the university classroom. It has allowed me to better sympathize both with the medical staff and patients, and has also deepened my understanding as to how cultural factors relate to healthcare. Coming from a nonmedical background, volunteering has given me a source of clinical experience that has fed back directly into classroom content and the quality of my teaching. I hope that this report might encourage some of my fellow EMP instructors to consider volunteering as an interpreter in a hospital.

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Can-Do Statementsを利用した医学英語教育ニーズの分析：医学部教員へのアンケート結果について

Assessing English needs of medical students using Can-Do Statements: Responses of teachers

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Background and Objective. While curriculums of medical students are packed and contents of English classes should be focused, their needs for English may not have been investigated comprehensively and elaborately. To address this situation, our research group aimed at their thorough and detailed needs for English, involving both teachers (at medical faculties many of whom were medical doctors) and students, and conducting questionnaires and objective tests. Since the amount of results exceeds the allowance of one paper, this paper only reports the needs of the teachers.
Methods. Newly developed *Can-Do Statements for EMP*, consisting of 50 questions asking the extent to which English is necessary in each situation medical doctors seem to be involved in, were distributed by hand or online to 91 teachers at medical faculties of two universities in Japan, whose ages and specialties (clinical medicine, basic medicine, general education) are varied.
Results. Overall, receptive skills such as reading and listening were rated higher than productive skills such as writing and speaking. Needs for medical words were also high. Besides, it was found that needs were varied by age and specialty groups.
Conclusion. The results of this study show that to make the curriculum in medical faculties more efficient, reading, listening, and medical words should be focused on. Plus, we should keep in mind that opinions towards English teaching are varied among teachers. To design balanced curriculums, it is necessary to audit opinions of multidisciplinary members.

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本論文は，大学英語教育学会第52回年次国際大会（京都市・2013年8月30日―9月1日開催）におけるポスター発表，および2013年度大学英語教育学会関西支部秋季大会（神戸市・2013年11月9日開催）における口頭発表を，一部改編したものである。

1. はじめに

高度な専門性を持つ医師は，英語に触れる機会も多いと考えられる。最新の医療に関する知識を得るために，論文を海外から取り寄せることもあれば，外国人の患者を診る機会もあると考えられる。しかしながら，このように多様なニーズがある中で，実際に医学部で英語を指導する時間は，逼迫するカリキュラムの中で限られているのが現実である。そういった中，医学英語に対するニーズを把握することで，短い時間で高い効果を上げる教育が求められていると言える。そこで，本論文では後に述べる医学英語のためのCan-Do Statementsを用いたアンケート調査に基づい

て，医学部教員間の医学英語に対するニーズを多角的に検証する。なお，この調査は，医学英語教育に関するニーズを多角的に調査・分析するプロジェクトの一部であり，当該プロジェクトでは，医学部教員，学生それぞれの医学英語，一般英語についてのニーズ，学生の現在の能力に対する自己評価調査，および客観的英語熟達度の測定を含んでいる。これらの調査結果および分析は，紙幅の都合上，別稿に譲ることにしたい。また，本論文では調査対象となった医学部教員の属性を臨床医学，基礎医学，総合教育講座の3つに分類して分析する(医学部教員には，主に医師免許を所持した医学専門教員と，英語等の教養科目を担当する教員の両方が含まれる)。なお，以後特段の必要のないかぎり，医学部教員を「教員」と呼称する。

2. 研究の背景

本研究における「医学英語」は，English for Specific Purposes (ESP) の下位分野のEnglish for Medical Purposes (EMP) を指す。ESPとは，「それぞれの学問領域や職域には固有のニーズが存在し，そのニーズによって同質性が認知され，異質性も生じてくる。そして，同質性が認知された各専門領域内では『ディスコース・コミュニティー』集団が形成され，その目的を達成しようとする。その場合，各集団の内外において明確かつ具体的目標を持って英語が使用される。その際の言語研究および言語教育」である。[1] この定義をEMPに適用すると，EMPとは，「医師，医学研究者，その他の医療従事者が含まれる集団が，その医療集団に特有のニーズと目標を持って，その集団の中で，あるいは患者に対して使用する英語に関する研究と教育」と考えることができる。

日本における医学英語に関する需要と関心は，近年ますます高まっている。日本医学教育学会外国語教育ワーキンググループによる1994年から1995年にかけて行われた全国の国立・私立の医学部・医科大学への調査において，「医学英語」という科目を設定している大学は，回答のあった54校のうち34校あり，これ以前に行われた調査よりも増加していることが報告されている。[2] また，1998年には医学英語教育学会の前身である医学英語教育研究会の第一回研究会が行われ，さらに，2008年には，日本医学英語検定試験が開始されている。

一方で，日本における医学英語教育は，EMPとは何かという統一的な理解がないままに行われてきたという経緯がある。[1] そこで，本研究では，ESPの方法論を取り入れることにより，より適切な医学英語教育の実現を目指す。

ESPの特徴は，アンケート調査や聞き取り調査によるニーズ分析に基づいて，シラバス・コース設計，教授法の決定，評価基準の設定を行う点にある。[1,3] ニーズ分析は，目標状態分析(Target Situation Analysis; TSA)と現状分析(Present Situation Analysis; PSA)から構成される。[3] TSAには「どのようなことを，どのレベルまで学習する必要があるか」と「どのようなことを学びたいと考えるか」が含まれる。PSAには，「学習者の現在の客観的英語熟達度」や「学習者の英語に対する態度」などが含まれる。TSA・PSAの調査対象となるのは，当該職業者集団とこれからその職業者集団に入っていく学習者である。EMPの文脈では，前者は医師・医学研究者，後者は医学部学生である。したがって，EMP教育を適切にすすめるためには，医師・医学研究者，医学部学生に対するニーズ分析を行い，TSAとPSAを行ってそれらのギャップを明確にし，そのギャップを埋めるような教育を行うことが必要となる。本稿では，これらのうち，医師・医学研究者からみたTSAを多角的に明らかにしていく。

3. 先行研究

ESPの観点に基づいてEMPに関してニーズ分析・調査を行った先行研究は，国内外を含めていくつか挙げることができる。本稿は，この中から，先駆的な調査である菱田・大木，横山他，および日本と英語の使用状況が類似していると思われるタイの調査を取り上げ，それらを比較しながら，その貢献と問題点を提示する。

表1は，上記の先行研究の調査対象，目的，方法・項目をまとめたものである。

菱田・大木は，卒後9，16，19年の医師計133名に聞き取り調査を行った。医師としての英語の使用については，卒後年数と英語使用の頻度には相関が見られない一方で，現在の職場別(大学関係，一般病院，開業)で実態が異なることが判明した。[4] 例えば，英語論文を読む頻度(**表1**，項目①)について，週に1本以上読む割合は，大学関係で82%であったのに対し，一般病院や開業医では，それぞれ24%，7%である一方，患者との英語使用頻度(同項目⑥)は，どの職場タイプでもあまり差がなかった。学部における医学英語教育の必要性に関しては，外国人患者との英会話(65%)，英語論文の書き方(63%)，英語論文の読解(62%)，カルテの英語(57%)，英語での学会発表の仕方(51%)の順に教育の必要性を感じていることがわかった。

横山他では，学生は「医学英語」「論文読解力」「英会話力」「発表能力」を，教員は「英会話能力」「発表能力」「論文読解力」を必要だと考えており，また，大学教育を超えて，医師として必要とされる能力では，「英文読解力」が最も必要とされていることが示された。[5] さらに，学生が学びたいスキルとしては，スピーキングが最も高く，次にリーディング，ライティング，リスニングと続いている。以上を踏まえて，横山他は，学生・教員共に，専門書や論文を読みこなすための英文読解力，英会話やプレゼンテーションに必要とされる口頭表現力の養成をニーズとして挙げている，と分析した。

Naruenatwatana & Vijchulataでは，医学専門教員が学生

表1　先行研究の調査項目・方法，調査目的

著者	対象（回答者数）	目的	項目・方法
菱田・大木	医師・医学専門教員（133）	実務における英語の使用実態および学部における医学英語教育に関する必要度を調査	①英語の論文を読む頻度 ②英語の論文を書く頻度 ③他人の英語論文をチェックする頻度 ④英語で口頭発表・講演をする頻度 ⑤学会のポスターセッションで，英語で発表する頻度 ⑥外国人患者と英語で話す頻度
横山，他	医師・医学専門教員（168） 学部学生（300）	一般・専門英語教育に対する実態調査	①日本人医師に英語は必要か ②大学教養課程で英語は必要か ③専門英語教育の必要性 ④医学部学生に対する英語教育の目標 ⑤大学の英語教育で伸ばしたい力 ⑥どの程度まで力をつけたいか ⑦英語教育に満足しているか ⑧医学部で英語コミュニケーション能力は必要か ⑨何年生まで英語の授業は実施すべきか ⑩医師として必要な英語力 ⑪開業医と研究者では違うか ⑫専門英語の習得に意欲を持っているか ⑬専門英語を誰に教えてもらいたいか
Naruenatwatana & Vijchulata	医師・医学専門教員（10） 学部学生（297） 医学部英語担当教員（7）	ニーズ調査	四技能それぞれに関して，比較的具体的な項目（例：“Listening to conversations on general topics.”，“Listening to lectures.”）を設定して，5件法で調査

に求める英語能力のニーズは，リーディングが最も高く，以下ライティング，リスニング，スピーキングの順であることがわかった。[6] また，リーディングの項目では，医学専門教員は特に reading medical textbooks, reading professional journals, reading medical reports のニーズが高いことを報告している。

以上3つの先行研究では，いずれもリーディング，特に論文読解へのニーズが高く，英会話，学会発表等の音声言語への一定のニーズもあるということが傾向として示されている。しかしながら，これまで行われてきた研究では，「どのような場面でどのような技能が必要か」という観点がすべての技能に関して明らかにされたとは言いがたい。つまり，

・アンケート項目が網羅的でなく，英語の使用場面・技能を全てカバーできていない。
・どの技能が，どの場面で必要かという具体的な質問項目になっていないものがある。そのため，医学部学生が必要な英語能力の特定が難しい。
・学生と教員に対するアンケート項目が異なるものがあり，学生と教員間の違いを検討することが難しい。

といったことが問題として挙げられるだろう。そこで，本研究では，TOEIC®の能力記述文（Can-Do Statements）を元に，医療・医学の場面に移し替えた記述文を新たに開発してアンケート項目として採用し（詳細は後述），より的確なニーズを技能・場面別，網羅的に把握することに努めた。

4. アンケートの開発

4.1. Can-Do Statementsと英語教育

本研究で使用したCan-Do Statements (CDS) とは，「（ある言語で）～ができる」という行動を表す表現で例示された言語運用能力の記述文 (descriptor) の集まりことで，Can-Doリストとも呼ばれる。例えば，「英語で自己紹介ができる」という記述文は，学習者にとっては「自分がそれをできるかどうか」を判断する自己評価のツールとなり，教員にとっては「学習者が現在それをできるかどうか」という習熟度評価，あるいは「指導の結果できるようになったか」という教育効果の評価を行うツールとなる。「英語で自己紹介ができるようになるため」の教材開発や，「できるかどうかをチェックする」テスト開発，さらには「いつまでに何ができるようになるか」を示すことでシラバス開発の基準や指針としても機能しうる。質問の形で「英語で自己紹介ができることは必要か」と問えば，その人がその項目についてどの程度の必要性を感じているかを調査することも可能である。このように，状況に即した具体的な能力記述文は，学習に明確な目標を与える有益な道具となりえる。[7]

しかしながら，ESPではまだCDSの事例は限られている。数少ない例としては小山が大学工学部におけるCDSの策定に着手し，妥当性の検証を行っているほか，深山が知的財産権分野におけるCDSおよびそれに準じた教材作成を行っている。[8–10] 医学・医療分野においては，日本薬学会が「薬学準備教育ガイドライン」の中で英語運用能力も取

り上げ，「読む」，「書く」，「聞く・話す」の技能に関して「～できる」という記述文が用いられ，それに準拠した教材も開発されているが，医学生用のCDSについては開発の端緒についたばかりである。[11–13]

4.2. Can-Do Statements for EMP

上記の課題を解決するため，本研究では，Educational Testing Serviceが*TOEIC® Can-Do Guide*で公開している能力記述文を日本語に翻訳し，医療・医学の場面に移しかえることで，一般英語とは異なるEMP用の記述文であるCan-Do Statements for EMP (CDS-EMP)を開発し，アンケート項目として利用した(**資料1**参照)。

TOEIC®のCDSを元リストとして採用した理由は，その網羅性・具体性，職業英語への応用の容易さにある。具体的に述べると，同CDSは5つのcommunicative domainsと呼ばれる技能 (reading, writing, speaking, listening, interactive communication skills) から成り，それぞれ15，計75の一般的な日常活動と，国際ビジネスにおける基礎的な活動を描写した能力記述文で構成されているため，網羅性が高く，また，具体的な日常の英語使用を反映していると言える。また，*TOEIC® Can-Do Guide*の選定基準の中に，「職場の状況に関連したタスクを記述していること」「職場におけるビジネスとソーシャルの両方の側面を反映していること」とあり，職業英語との連関も考慮されている。[14] そのため，EMPのように「(将来的に)医師として，現場で，～できる」という記述文を考えていく上で有用性が高いと考え，元リストとしての採用に至った。

CDS-EMPの開発に当たり，本研究グループは，*TOEIC® CDS*の75の記述文を日本語に翻訳し，その後，医科大学での授業や医療現場を具体的に想定した記述文へと書き換えていった。例えば，TOEIC®のリスニングの記述文「ラジオ等でニュース放送を理解することができる」は「医療に関わる一般向けの記事やニュースを講読・視聴し，理解することができる」とし，この記述文は「医学に関する教養」に分類された。また，TOEIC®リスニングの記述文「人に会ったときに『お元気ですか』『どこに住んでいますか』『ご機嫌いかが』といった単純な質問を理解することができる」と，スピーキングの記述文「人前で自己紹介したり，適切な挨拶や別れの表現を使ったりすることができる」をまとめて「患者にあいさつし，円滑にコミュニケーションをとることができる」とし，「外国人患者に対する診療」に分類した。TOEIC®のCDS以外にも，医学英語におけるニーズ分析の先行研究で問われている項目や，教員や研究協力者からの情報等を参考にして記述文を追加し，計54項目を作成した。その後，場面別に記述文を分類・統合し，パイロット調査実施段階では「医学論文を読む」が6項目，「学術集会・講義・演習において」が3項目，「他の医療スタッフとのコミュニケーション」が2項目，「外国人患者に対する診療」が4項目，「語彙」が6項目，「医学に関する教養」が3項目，計24項目のリストとなった。この分類方法は，臨床の教員に対するアンケート調査において場面設定が具体的であるほうが回答しやすいのではないかという判断によるものであった。

この場面別24項目からなるアンケートを使って学生68名(1年生37名，4年生31名)および教員15名にパイロット調査を行ったところ，選択肢の設定と項目の分類法に関する問題が明らかとなった。選択肢の設定においては，必要だと思う度合いを「非常に(絶対)必要だと思う(＝4)」～「全く思わない(＝1)」の4件法とし，経験がない場合を考慮して「わからない」という選択肢を別に設けていたが，間隔尺度として処理しやすくするために，本調査では，「わからない」を削除して「そう思う(＝5)」「ややそう思う(＝4)」「どちらとも言えない(＝3)」「あまりそう思わない(＝2)」「そう思わない(＝1)」の5件法とし，それぞれの文言を明示した。

また，項目の分類については，学生および英語教員にとっては技能別分類のほうが理解しやすく，将来的な大学カリキュラムへの反映や，項目間での分析のしやすさを考えると，記述文を技能別に分類したほうがより実質的な調査結果が得られるのではないかという判断から，記述文をリスニング，リーディング，ライティング，スピーキングの4技能に振り分け直す作業を行い，必要に応じて項目の追加・統合・削除を行った。

最終的にCDS-EMPはリスニング11項目，リーディング14項目，ライティング9項目，スピーキング16項目，計50項目のリストとなった(**資料2**参照)。また，各項目には，「用語」「一般・ニュース」「授業」「患者」「研究・学会」「医療従事者」の6つの場面のいずれかのラベルをつけている(「用語」は正確には場面とは言えないが，語彙に対する場面横断的なニーズを把握する必要があるとの判断から，一つの場面として分析を行った)。これにより，どの技能がどのような場面で必要なのかについて，網羅的に把握することを目指している。

このリストの特徴は，技能別に医学・医療の(教育)現場に特化した具体的な能力記述文の集まりであり，用語レベルから専門的なインタラクションまで，幅広い難易度の活動をある程度網羅している点である。特に，医学英語特有の言語の二重性(患者向けの一般用語と専門家向けのラテン・ギリシャ語系の専門用語の併存)を考慮し，「身体部位を患者に分かるように日常用語で言うことができる」と「身体部位を解剖用語で言うことができる」のように別項目を立てたり，「患者の話を聞いて，その症状，病歴，生活習慣を理解することができる」と「他の医療従事者が患者の症状を話すのを聞いて理解することができる」のように，コミュニケーションの相手が一般人なのか専門家なのかを明示したりした。さらに，「グループワークやPBL形式授業で口頭発表をすることができる」のように，実際の医学教育現場を反映した項目も含まれている。

5. アンケート調査の実施

パイロット調査後，項目の並べ直し・精査を行った上記のCDS-EMPについて，2013年7～8月にかけて，紙媒体またはオンライン（アンケート調査用ウェブサービスSurvey Monkeyを使用）を通して回答を依頼し，2つの私立大学の医学部教員計91名から回答を得た。回答者の属性は**表2**のとおりである。

6. 結果

6.1. 全体像

教員全体の回答結果を技能別・場面別にまとめたものが**表3**・**表4**である。全体として，受容スキル（リーディング・リスニング）へのニーズが産出スキル（ライティング・スピーキング）よりも高く，また，用語，一般・ニュース等のニーズが高い一方で，患者と接する，研究・学会，医療従事者とのコミュニケーションの際に使う英語に対するニーズは，あまり高くないということが分かった。**表5**および**表6**に，全体ニーズの上位項目と下位項目を挙げておく。

表2　回答者の属性

医師免許		卒後年数 5年未満	6～10年	11～20年	21～30年	31年以上	その他	合計
なし	臨床医学						1	1
	基礎医学						16	16
	総合教育						3	3
	合計						20	20
あり	臨床医学	13	4	13	16	4		50
	基礎医学	0	1	4	4	6		15
	総合教育	0	1	0	0	1		2
	無回答	0	0	1	2	0		3
	合計	13	6	18	22	11		70
無回答							1	1
総計	臨床医学	13	4	13	16	4	1	51
	基礎医学	0	1	4	4	6	16	31
	総合教育	0	1	0	0	1	3	5
	無回答	0	0	1	2	0	1	4
	合計	13	6	18	22	11	21	91

表3　技能別ニーズ（教員全体・平均）

リーディング	リスニング	ライティング	スピーキング
4.1	3.8	3.5	3.5

表4　場面別ニーズ（教員全体・平均）

用語	一般・ニュース	授業	患者	研究・学会	医療従事者
4.0	3.9	3.7	3.6	3.6	3.5

表5　ニーズ上位5項目

技能・場面	項目	ニーズ
リーディング・用語	病名を読んで理解することができる	4.33
リーディング・用語	身体部位の日常用語を読んで理解することができる	4.30
リスニング・用語	身体部位の日常用語を聞いて理解することができる	4.27
リーディング・研究・学会	抄録（論文の内容を要約したもの）を読み，理解することができる	4.26
リーディング・用語	身体部位の解剖用語を読んで理解することができる	4.25

表6　ニーズ下位5項目

技能・場面	項目	ニーズ
ライティング・医療従事者	薬の処方箋を書くことができる	3.24
スピーキング・研究・学会	学会で質問に口頭で答えることができる	3.22
スピーキング・研究・学会	研究者・医師と患者の病状，治療法など専門的な内容について議論することができる	3.17
スピーキング・医療従事者	電話で患者の状態を別の医療従事者に口頭で説明することができる	3.17
スピーキング・医療従事者	他の医療従事者（医師，看護師，理学療法士，技師など）に患者の情報を伝え，治療方法を口頭で指示することができる	3.15

6.2. 技能・場面・教員属性別のニーズ

表7・表8は，技能別，場面別のニーズを属性別にまとめたものである。ここでは，それぞれについて分散分析を行い，教員全体のニーズの傾向，および，教員の属性によるニーズの差について明らかになった結果を報告する。

6.2.1. 技能別（全体・教員属性別）

技能別では，技能の種類を参加者内要因，専門および卒後年数を参加者間要因として，3元配置の分散分析を行った。その結果，まず教員全体の各技能へのニーズについて，$F(3, 213)=22.9, p<0.01$ となり，有意差が観察された。多重比較の結果，リーディングは他の3つの技能よりニーズが高く，また，リスニングはスピーキングよりもニーズが高いことが分かった。また，専門の違いによる差も有意であった（$F(3, 71)=3.6, p<0.05$）。多重比較の結果，基礎医学を専門とする教員のニーズは，臨床医学を専門とする教員よりも高いことが分かった。卒後年数については，$F(5, 71)=4.1, p<0.01$ となり，多重比較の結果卒後5年以内の教員のニーズが，卒後21〜30年，卒後31年以上の教員よりも有意に低いことがわかった。また，交互作用については，技能×専門，技能×卒後年数，専門×卒後年数，技能×専門×卒後年数，のいずれも有意な差が見られず，属性による技能に対しての特別な傾向は観察されなかった。

6.2.2. 場面別（全体・教員属性別）

場面別では，場面の種類を参加者内要因，専門および卒後年数を参加者間要因として，3元配置の分散分析を行った。その結果，まず教員全体の場面別のニーズについて，$F(5, 360)=13.7, p<0.01$ となり，多重比較の結果，用語，一般・ニュースに対してのニーズが，患者，医療従事者，研究・学会，授業のニーズよりも高いことが分かった。次に，専門別のニーズの差であるが，$F(3, 72)=2.5, p>0.05$ となり有意差は観察されなかった。これは同じ質問項目を対象としていることを考えると，6.2.1の結果と矛盾するようにも思われるが，分散分析の処理過程で平均値をとる必要があり，平均を取る際には項目の数の情報が消えてしまうため，統計処理の元となる数値（平均値）が異なったためであると考えられる。また，後述するが，場面別のニーズと教員属性には交互作用が観察されるため，それが影響しているとも考えられる。卒後年数については，$F(5, 72)=4.0, p<0.01$ となり，多重比較の結果，6.2.1と同様の傾向が見られた。交互作用については，場面×専門のみ有意（$F(15, 360)=2.0, p<0.05$）であり，多重比較の結果，臨床医学を専門とする教員は，用語に対するニーズが医療従事者，および研究・学会のニーズより高いのに対して，基礎医学を専門とする教員は，用語に対するニーズが，患者，医療従事者，および研究・学会のニーズよりも高かった。また，総合教育講座を担当する教員については，場面間のニーズに有意差はなかった。

7. 考察

7.1. 全体考察

まず，技能別にみると，受容スキル，特にリーディングへのニーズが高いことが判明した。これは横山他，および，Naruenatwatana & Vijchulataの研究と一致する。一方で，菱田・大木では医学英語教育に対して外国人患者との英会話の育成が重要だとしているが，これは実際にそのような

表7　技能別ニーズ（属性別・平均）

	リーディング	リスニング	ライティング	スピーキング
卒後5年以内	2.9	3.0	2.5	2.4
6〜10年	3.9	3.8	3.5	3.5
11〜20年	4.1	3.6	3.3	3.2
21〜30年	4.2	3.8	3.6	3.7
卒後31年以上	4.8	4.2	4.3	4.0
臨床医学	3.8	3.6	3.2	3.2
基礎医学	4.5	4.2	4.2	3.9
総合教育	4.7	4.2	4.1	3.7

表8　場面別ニーズ（属性別・平均）

	用語	一般・ニュース	授業	患者	研究・学会	医療従事者
卒後5年以内	2.9	2.8	2.5	2.7	2.5	2.6
6〜10年	3.9	3.8	3.6	3.7	3.6	3.4
11〜20年	3.8	3.9	3.6	3.4	3.4	3.3
21〜30年	4.2	3.8	4.0	3.8	3.7	3.6
卒後31年以上	4.6	4.5	4.4	4.1	4.1	4.2
臨床医学	3.7	3.6	3.4	3.4	3.3	3.2
基礎医学	4.4	4.3	4.2	3.9	4.0	4.0
総合教育	4.5	4.5	4.1	3.9	3.9	4.0

場面が多いというよりも，大学時代にしか出来ない教育内容として挙げているものと思われる。今回の網羅的なニーズ調査では，「学生の能力として卒業時に持っているべきもの」という聞き方をしていると考えると，まず英語の必要度としては，リーディング(・リスニング)が高いと言えると思われる。

場面別では，用語，および一般・ニュースへのニーズが比較的高かった。特に，用語について，各技能を通してニーズが高いことがわかり(**資料2**参照)，これは高校までで学習できていない医学用語について，大学でしっかりと学ぶ必要性を，強く反映していると言える。一方で，上述の患者との英会話等については，相対的ではあるがニーズは高くなく，現実の医療場面を反映していると捉えられる。また，医療従事者場面のニーズも高くなく，外国人の看護師，理学療法士等と接する機会は限られているのだと思われる。

次に，専門による違いであるが，技能別の分析(6.2.1)で有意差があり，また，平均値自体を見てみても，専門による差が観察されたと言っていいのではないであろうか。基礎医学を専門とする教員のニーズが(たとえ有意とはいえないとしても)高いことは，研究活動に従事する時間が長く，国外との情報の受信・発信をこなす必要があることを反映していると推察される。

また，専門により，場面別のニーズが異なることが興味深い。総合教育教員が，場面間のニーズに差を見出していない一方で，臨床医学および基礎医学の教員の分析結果は，必要な場面をはっきりと示しており，また，さらには臨床医学教員と基礎医学教員では患者場面のニーズの結果に差が見られた。基礎医学教員の結果で，同ニーズは最も高かった用語ニーズよりも有意に低かったが，臨床医学教員の結果では，両者に有意な差はなかった。これについては，臨床医学教員の方が，外国人患者と接する場面を経験し，そのようなニーズも低くはないということを認識していると考えることが自然ではないであろうか。であるとすれば，多くの医学生が臨床医になる可能性が高いことを鑑みても，(全体としてのニーズがあまり高くない)患者場面の英語教育について，ある程度考慮に入れる必要性があると言えるかもしれない。また，総合教育教員と医学専門教員の場面間ニーズの認識が異なったことは，今後のカリキュラム作成において，幅広い視野が求められることを意味する。医学部という専門教育が必要な場所においては，専門性の高い医師・医学専門教員に意見を聞くことが，効果的な英語力育成のために，重要なのではないであろうか。

卒後年数が短い教員ほど，英語に対するニーズが低いということは，過去の研究ではなかった新しい知見であった。直接の理由を即座に見出し難いが，菱田・大木の「卒後年数によって英語使用の頻度に差はない」との結果を鑑みるに，実際の必要度の差というよりは，ニーズの感じ方に違いがある可能性がある。一つの解釈としては，卒後年数の短い教員については，時代背景もあり，英語の必要性について大学在学時から強く言われてきたということが考えられるのではないであろうか。反対に，卒後年数が長い教員については，英語の重要性はあまり認識しないまま医師になり，その後職業上必要となったことで，強くそのニーズを感じている可能性はある。もちろん，この裏付けには質的分析等の裏付けが必要であるが，世代ごとのニーズの数値が，傾向として異なることには，今後も同種の分析をする際の留意事項となるであろう。

7.2. カリキュラム作成への提言

本研究の結果より，大学病院の医療現場で働く医師や教員達へのアンケート調査から，受容スキルのニーズが高いことと，どのような英語使用場面のニーズが高いか明らかとなった。従って，医学英語教育について以下のような提言ができる。まず，ニーズが高かった受容スキルである，リーディングとリスニングについての医学英語教育は必須であると考えられる。この際，「用語」はリーディング，リスニングのいずれでもニーズが高く(**資料2**参照)，早い時期から指導を行う必要がある。注意が必要なこととして，同じ「身体部位」の用語であっても，リーディングとリスニングでニーズに開きがある場合があることが挙げられる。具体的には，リーディングでは「身体部位の日常用語を読んで理解することができる」(4.30)も「身体部位の解剖用語を読んで理解することができる」(4.25)も高いニーズがあった一方で，リスニングでは，「身体部位を日常用語で聞いて理解することができる」は4.27と高いニーズがあったものの，「他の医療従事者が身体部位の解剖用語を話すのを聞いて理解することができる」は3.85とニーズに若干の開きがみられた。このことは，実際の医療現場で，カルテや論文で解剖用語を見て理解する必要はあるが，会話で解剖用語を用いることはそれ程多くないことを反映している可能性がある。このような情報は，教授内容と習得すべきスキルの関係を考えるうえで有用であり，授業を組み立てる際にも，「身体部位の解剖用語」のリスニングを行う前に，ニーズが高い他の項目を優先させるなどの配慮が可能となる。

本研究の結果は，リスニングやリーディング等の技能内で，どの項目から指導を行うか，また，どのような教材を用いるかといったシラバス開発についても大きな役割を果たす可能性がある。例えば，リーディングのオーセンティックな教材として，教科書以外に論文の抄録や症例報告，一般向け雑誌の医学に関する記事，カルテ等を用いることが考えられるが，論文の抄録(4.26)や一般向け雑誌(4.06)，症例報告(4.04)のニーズが高いのに対して，医療機器の説明書(3.73)は，医学に非常に深い関連があるにもかかわらず，ニーズがそれ程高くない。このように，本研究で得られたニーズ分析の結果を利用することで，より現場のニーズに合った教材選択やシラバスを展開することができるだ

ろう。

先行研究で取り上げた横山他は，ニーズ分析の結果を踏まえて，リーディング中心のシラバス例を提案しており，辞書を使用しない形での文章の要約と，辞書を使用した精読を組み合わせること，また，インターネットを利用した最新のトピックに関する読解等を提案している。[5] さらに，学生の英語学習へのモチベーションを高めるためには，病気を持つ患者の現実をイメージさせるような題材を扱うことが有効であるとしている。本研究で判明した具体的な教材対象の提案(論文の抄録，一般向け雑誌等)を踏まえながら，横山他が授業実践も踏まえて提案していると思われる具体的な活動を進めていくことが，より効果的な医学英語教育の実践へとつながるのではないかと推察される。

本研究の調査では，卒後年数や，臨床医学や基礎医学等の専門の違いによってニーズが高い技能が異なるという結果が得られた(**表7・8**)。このことは，医師としての職階の違いや仕事内容の違いにより，必要な英語技能が変化する可能性を示唆する。こうしたことを考慮に入れると，学生の将来の志望や，現段階での英語力に基づいて，〈Standard〉と〈Advanced〉のようなレベルを分けた教材を導入することが望ましい。具体的には，本研究の結果で多くの医師や教員に指導ニーズがあった医学用語のような技能は，〈Standard〉として1〜4年次まで開講する一方で，卒後年数や専門によってニーズのばらつきがある技能や，英文抄録や論文の読解，プレゼンテーション，医学関連論文の書き方等の高度な技能については，〈Advanced〉として，熟達度の高い学生や意欲のある学生が選択できるようにするという形を取ることで，学生だけでなく医師や教員のニーズをも満たすことができるであろう。

最後に，英語教員と医学専門教員を交えた医学英語教育を行うことも重要である。例えば，医学用語を指導する場合，専門の講義で未修の用語が，医学英語科目で先に出てしまうという状況がしばしば見られる。こうした状況は，医学専門教員が教授すべき用語の選定を行い，英語教員が音声的・形態論的指導を行うことで対応することができよう。さらにリーディングの講義を行う場合にも，医学専門教員が英語論文・論文抄録の読解指導を行い，英語教員が一般的英語能力を高めるための文法指導含む読解指導を行うことで，英語教員と医学専門教員の間で緊密な連携の取れた医学英語教育を行うことが期待できる。

8. おわりに

本論文では，EMPに関する網羅的なCan-Do Statementsの策定過程と医学部教員へのアンケート調査実施について報告し，その結果について技能別・場面別の全体的な傾向，および教員属性別のニーズの特徴を分析した。先行研究の結果に概ね沿う結果もあったが，技能と場面をクロスさせてニーズを観察したことで，相対的に重要なニーズを抽出することができたと考えられる。一方で，本研究は，医師免許を持ちながらも大学で勤務する教員が調査対象であり，学生が卒業時に持っているべき英語力を聞いているものの，一定の偏りが存在することは否めない。医師が必要な英語力という観点からは，開業医・(大学病院でない)勤務医も含めて，広汎な調査が今後も必要だと思われる。また，医学教員ニーズという点においても，医学英語教育に対するニーズは，大学によって異なることも考えられるため，本研究で作成したアンケートを他校でも実施することで，多様なニーズの把握に役立てていただければ幸いである。本研究で作成したCDS-EMPは，十分な網羅性を持つように配慮して作成したため，医師・医学部(医学科)学生だけでなく，作業療法士，理学療法士や看護師を目指す学生のニーズを把握することにも応用が可能であると考えられる。ただ，同種のリストが他にあまりない中で，手探りで作成したため，不備・修正すべき点があることも大いに考えられる。よりよい医学英語教育の実施のために，アンケートの改善，また，それを踏まえたカリキュラムの改善については，不断の努力が今後も必要である。最後に、CDS-EMPと非常に親和性が高いと思われる医学英語教育学会による「医学教育のグローバルスタンダードに対応するための医学英語教育ガイドライン(案)」については、その公開が本稿の執筆段階であったため、CDS-EMPとの比較検討をすることができなかった。この点については、今後の研究課題としたい。

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資料1：CDS-EMPアンケートフォーマット

まず，ご自身についてお答えください（1，2は当てはまるものに○をつけてください）。

1. 教室　臨床医学　・　基礎医学　・　総合教育講座
2. 医師免許　持っている　・　持っていない
3. （2で持っていると回答された方のみ）　卒後年数　＿＿＿年

以下の項目では，医学部生が大学卒業時（＝研修医開始時）までに「英語で」どの程度身につける必要があるかどうかについてお聞きします。
各項目について，「そう思う（＝5）」～「そう思わない（=1）」のうち当てはまると思うものに○をつけてください。

Listening

		そう思う	ややそう思う	どちらともいえない	あまりそう思わない	そう思わない
1	身体部位を日常用語で聞いて理解することができる	5	4	3	2	1

資料2　アンケート項目と結果平均値（得点順）

技能	場面	項目	平均
リスニング	用語	身体部位を日常用語で聞いて理解することができる	4.27
	用語	診療科・専門分野の名前を聞いて理解することができる	3.95
	用語	他の医療従事者が病名を話すのを聞いて理解することができる	3.90
	用語	他の医療従事者が身体部位の解剖用語を話すのを聞いて理解することができる	3.85
	医療従事者	他の医療従事者が患者の病状を話すのを聞いて理解することができる	3.80
	患者	患者の話を聞いて，その症状，病歴，生活習慣を理解することができる	3.78
	一般・ニュース	医学に関わる一般向けのニュース，ラジオ番組，講演などを聞いて理解することができる	3.66
	医療従事者	他の医療従事者（医師，看護師，理学療法士，技師など）が話す業務上の説明，指示を聞いて理解することができる	3.66
	研究・学会	他の研究者・医師の学会発表を聞いて理解することができる	3.62
	用語	他の医療従事者が話す医学用語の略語を聞いて理解することができる	3.56
	医療従事者	医療機器などの使用の仕方の説明を聞いて理解することができる	3.47
リーディング	用語	病名を読んで理解することができる	4.33
	用語	身体部位の日常用語を読んで理解することができる	4.30
	研究・学会	抄録（論文の内容を要約したもの）を読み，理解することができる	4.26
	用語	身体部位の解剖用語を読んで理解することができる	4.25
	用語	診療科・専門分野の名前を読んで理解することができる	4.20

技能	場面	項目	平均
リーディング	研究・学会	医学論文を読んで一般的な構成と流れを理解することができる	4.20
	授業	英語で書かれた教科書を読むことができる	4.07
	一般・ニュース	一般向けの雑誌，新聞などの医学に関わる記事を読んで理解することができる	4.06
	医療従事者	症例報告を読んで病状を理解することができる	4.04
	研究・学会	医学論文に書かれてある研究の結果(統計処理，表やグラフを含む)が理解できる	4.02
	医療従事者	薬の処方箋を読んで理解することができる	3.94
	一般・ニュース	インターネット上の治療に関わる情報を読んで新しい知見を得ることができる	3.89
	用語	カルテに書かれている医学用語の略語を理解することができる	3.81
	医療従事者	医療機器の説明書を読んで理解することができる	3.73
スピーキング	用語	診療科・専門分野の名前を言うことができる	3.94
	用語	病名を言うことができる	3.94
	用語	身体部位を解剖用語で言うことができる	3.77
	患者	身体部位を患者にわかるように日常用語で言うことができる	3.74
	患者	患者に診察日(アポイントメント)を口頭で伝えることができる	3.65
	患者	患者にあいさつし，口頭で円滑にコミュニケーションをとることができる	3.56
	授業	グループワークやPBL形式授業で口頭発表することができる	3.41
	研究・学会	学会で口頭で研究発表する(質疑応答を含まない)ことができる	3.38
	研究・学会	論文の要約を他の研究者・医師に口頭で説明することができる	3.35
	患者	患者に病状や治療法を口頭で説明することができる	3.32
	医療従事者	他の医療従事者(医師，看護師，理学療法士，技師など)に検査を口頭で依頼することができる	3.27
	研究・学会	学会で質問に口頭で答えることができる	3.22
	研究・学会	患者に薬の効能を口頭で説明することができる	3.19
	研究・学会	研究者・医師と患者の病状，治療法など専門的な内容について議論することができる	3.17
	医療従事者	電話で患者の状態を別の医療従事者に口頭で説明することができる	3.17
	医療従事者	他の医療従事者(医師，看護師，理学療法士，技師など)に患者の情報を伝え，治療方法を口頭で指示することができる	3.15
ライディング	用語	身体部位の解剖用語や病名を書くことができる	3.97
	用語	身体部位の日常用語を書くことができる	3.93
	用語	医学用語の略語を書くことができる	3.61
	研究・学会	抄録を書くことができる	3.60
	医療従事者	他の研究者・医師に対して専門的な内容のメールを書くことができる	3.48
	医療従事者	カルテを書くことができる	3.45
	医療従事者	他の病院・医師に患者の紹介状を書くことができる	3.37
	研究・学会	医学論文を書くことができる	3.30
	医療従事者	薬の処方箋を書くことができる	3.24

The efficacy of the etymological approach in English as a Foreign Language instruction for Japanese medical school students

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Explicit etymological instruction has been the preferred method for teaching medical terminology to medical students for centuries, as it purportedly offers certain benefits that set it above other vocabulary instruction strategies. Recent research in other contexts has raised questions about the efficacy of this method of instruction. This article proposes that the problem may lie in the foundation knowledge that is required to make full use of etymological instruction. A review of the underlying assumptions suggests that Japanese medical school students cannot be assumed to possess the foundation knowledge traditionally associated with etymological instruction. This may diminish its efficacy in Japanese medical schools, specifically in unlocking those benefits traditionally associated with this method of instruction. Further research is required into this area.

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Keywords English as a foreigh language, etymology, assumptions, medical English

1. Introduction

There are those who advocate teaching English word parts (English etymology) to Japanese medical school students in the belief that this will help students to learn, retain and generalize vocabulary more effectively.[1–4] Explicit etymological instruction (EI) potentially offers certain unique benefits that make it ideal for teaching students studying medical or other scientific terminology, such as allowing students to guess the meanings of unfamiliar technical words, improving pronunciation, and gaining a deeper understanding of words.[3,4]

These benefits are of particular use in studying medical terminology, because of the high density of Greek and Latin word parts in medical vocabulary, with a high prevalence of approximately 200 common word parts.[1–3] These benefits may also transfer to studying vocabulary in medical English and general English studies, since the 200 word parts common to medical terminology overlap considerably with the 100 most common word parts in general English vocabulary.[5]

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Research exists suggesting that higher-performing English second-language (ESL) students can access the full benefits of EI. However it may be that these students can only use this strategy, and receive these benefits, because they already have higher than average English abilities.[6]

There is also research that casts doubt on the benefits of explicit EI for ESL learners, with research on some ESL learners finding no statistical proof for the efficacy of this approach.[7–12] In Japan there is research suggesting that students of English as a Foreign Language (EFL) do not benefit from this teaching approach, although this research is of limited utility because of the context in which it took place.[13] Moreover, even studies with English first-language (L1) students on the effects of EI have yielded mixed results.[14]

Given the mixed research findings on the efficacy of explicit EI, the claims regarding its superior effectiveness in learning scientific and medical terminology, and the lack of research into this area in Japan, it seems only reasonable to investigate further in order to ascertain why previous studies have yielded such mixed results regarding its efficacy.

First, the history, purported benefits, and underlying assumptions of explicit EI will be reviewed in order to provide an operational definition of what is meant by EI. Next, the validity of the assumptions underlying explicit EI will be

investigated in the context of Japan, specifically focusing on medical students in Japan. Some original research will also be presented in the form of the results of a questionnaire administered to 103 second-year medical students.

The review will show that EI assumes certain foundations. Research will be cited to show that without these foundations the benefits of explicit EI may not be accessible to students. Finally, research will be reviewed to examine whether medical students in Japan can be assumed to have the requisite foundation knowledge required to access the full benefits of EI.

The goal of this article is to establish that the foundations required to produce the full benefits of EI cannot be assumed to be present in many or even most Japanese medical students, and that further research is therefore needed to assess the impact of this lack.

2. Explicit etymological instruction

Explicit EI is a method of instruction where students study the origins and meanings of words, and word parts (prefixes, suffixes and root words), that express meaning. When teaching medical terminology the focus is normally on Greek and Latin word parts.[5]

Defining EI is not a simple task. EI takes place worldwide in countries where English is a first language, second language, and foreign language. Compounding this issue EI also takes place at a wide variety of levels, from primary to tertiary. In order to arrive at a clearer understanding of what is meant by EI the history and benefits associated with EI will be briefly reviewed.

2.1. The origins of etymological instruction

In von Fritz[15] the idea of students studying the history of words is traced back to the Roman orator and educator Quintilian, and his theories of education, as proposed in *Institutio Oratoria* in 95 CE.

In the 16th century, during the Renaissance, Latin and Greek were actively re-introduced into English, along with a great many loan words from other languages, such as French, Italian, and other European languages.[5] The 16th century marked a renewed interest in the history of words.

In 1821 Grimshaw[16] produced *An Etymological Dictionary*, aimed at instructing students of the sciences in the history of words and thereby the meanings of word parts. In addition to Grimshaw's dictionary there are also dictionaries and workbooks focusing on etymology produced for school children, by individuals such as Stormonth[17] and Chambers.[18] Earlier etymological dictionaries exist, but the 19th century seems to be when the etymological approach became popular in English instruction for school students. It is certain that for nearly two centuries EI has been a part of English education.

2.2. The potential benefits of explicit etymological instruction

The potential benefits of EI offer a useful method for assessing its scope and outcomes in a meaningful way. Not all instructors may cover all of the aspects of EI, but this section will review those benefits associated with EI in the literature in order to obtain a clearer idea of what range of outcomes EI should be producing.

One of the potential benefits of explicit EI is that it allows students to both guess at the meaning of an unfamiliar word, and to gain a deeper understanding of the words that they already know.[12–14]

English is a compound language that evolved from several other related languages, namely Greek, Latin, French and the Germanic languages.[5] In the sciences a large portion of the vocabulary is taken from Greek and Latin.[5,19] However, some words may come to English through other languages, such as German or French, which can prove confusing for learners because of the shifts in pronunciation and use.[20] Medical terminology uses many Greek and Latin word parts, which is why explicit EI is frequently used for teaching medical students.[21]

Fluency in these languages is not required, but an awareness of the basic structure of the language which the word or word part came from can assist in pronunciation, spelling and understanding.[22] For example the Greek word part *-oma* refers to a tumor or mass, and is generally pronounced in a consistent fashion as /əʊmə/.

Another potential benefit of the etymological approach is that it aids in linking known words by similar features. Once someone knows the meaning of *-oma* it is possible to cross-reference all words sharing this word part, such as lymphoma and carcinoma, and group them together, rather than storing the words singly in unrelated memory locations. This networking effect aids recall and each time one of the words in the network is recalled it helps to reinforce the memory of the entire network.[20,23–25]

Finally, the explanation of the history and meanings of the word contextualises the word or word part. Placing the words in their cultural and historical context provides not only a mnemonic benefit, but also provides a richer understanding of the history of the English language and the inter-connected nature of European cultures and languages.[26] Understanding that a word is Latin may help to understand how a word transforms, such as why the plural of vena

cava is venae cavae, or the plural of bacterium is bacteria. There are also more recent shifts, such as the recent preference for the simpler American English spelling in medical terminology, such as anaesthetic (British English) becoming anesthetic, or foetal becoming fetal.

The potential benefits of explicit EI can be summarised as follows:

a) The ability to guess the meanings of unknown words
b) A clearer understanding of the underlying meanings of words
c) Some of the word's cultural and historical context, which may aid memory
d) Better pronunciation
e) Some understanding of the reasons behind English's irregular spelling rules
f) A stronger conceptual framework for memorizing and recalling words and word parts
g) An understanding of the history of English and its connection with other European cultures and languages

2.3. An operational definition of etymological instruction

An examination of the benefits of EI provides the basis for a more satisfactory operational definition of the term.

EI is distinguished from other instructional methods in that it promotes an awareness of the underlying structure and form of English words, and through this awareness produces most of the benefits associated with this teaching approach.

This awareness that English words can be broken down into word parts allows students to identify words with similar word parts, which unlocks the ability to group words containing the same word parts in the students' mental lexicon, creating stronger memory structures (benefit f).

The grouping process also enables students to see that similar words contain similar meanings, and so when a student encounters an unknown word that has similar features to several known words they can guess the meaning by comparing the word to similar words and seeing if there is a common theme (benefit a).

This understanding of word parts can also allow students to re-examine known words and arrive at a deeper understanding of a word (benefit b).

Finally, word parts tend to be pronounced and written fairly consistently, and so word parts grouped together will share similar pronunciations and orthography, allowing the student to make an educated guess at the pronunciation of an unfamiliar word and connect how this sound is normally written (benefits d and e).

The common element underlying and enabling all of these benefits is an awareness of English word parts. Whether the teacher is pointing out the occasional word part each class, such as that *-itis* indicates that the word relates to inflammation, or giving an entire 15 week course on prefixes, suffixes and roots, this definition is consistent and distinguishes EI from other instruction methods.

There are other ancillary features of EI, such as contextualising the word through its history, cultural relevance, and so forth, (benefits c and g) but these features are not definitive. For example, the teacher who just points out a few word parts each class is not likely to offer much in the way of context, so contextualizing words is not a consistent feature of EI, nor is it necessary to unlock most of the benefits.

It is important to note that an awareness of word parts is a necessary, but not sufficient, condition for unlocking the benefits of EI. Other preconditions must be met in order to realise the benefits.

2.4. The assumptions of etymological instruction

The potential benefits of explicit etymological instruction are based on several assumptions. The purpose of reviewing the foundation conditions presupposed in EI is not to imply that the lack of one or more of these conditions will automatically invalidate this teaching method, but rather that these are potential areas of concern that may interfere with the effectiveness of EI.

The first assumption relates to the student's existing level of competence in English. EI presupposes an individual with a strong initial English ability that is being supplemented, rather than an individual with a lower level of English ability who may be easily misled or confused by false cognates. For example, aroma shares the same final sound as the Greek *-oma*, but derives from Latin, and has nothing to do with tumours or masses.

On a similar note, one might correctly recognise that the term hepatoma derives from the Greek *hepato-*, meaning relating to the liver, and *-oma*, meaning a tumour or mass, and conclude that the word indicates a tumour of the liver. However, this analysis does not make it clear that the term specifically refers to a hepatocellular carcinoma, which is a malignant tumour of the liver. When scanning a text, English learners with a strong grounding in the English language might only encounter one or two words that they don't understand. EI would provide them with a broad understanding of the word, sufficient for them to continue reading so that they could clarify their understanding from the context. English learners with a weaker grounding might

encounter multiple points of confusion, and despite the hints provided by explicit etymological instruction, may be unable to proceed, or may misunderstand the meaning entirely.[27] Research has shown that children, who have smaller vocabularies, are unable to reliably make use of strategies to guess the meaning of unfamiliar words.[28] Students who learn a strategy that appears to work, but later proves unreliable, will abandon the strategy.[25,29]

The second assumption is that EI enhances memory regardless of vocabulary size. This effect is built on the assumption the learner has a sufficiently large vocabulary, containing multiple instances of the same word parts.[20,23,24,30] In students with smaller vocabularies, who lack a sufficient numbers of words containing the same word parts, this mnemonic effect would be expected to be weaker or even non-existent. To use a simple analogy, consider a tourist's travel dictionary of a few thousand words as compared to a full dictionary with tens of thousands of entries. The travel dictionary appears merely alphabetically organised, and looking at the words and meanings on a page will probably show no other patterns. By contrast open a full dictionary and a critical observer will see that the words are organized alphabetically, but also by prefix, with many words on a page sharing a common meaning, and this can aid learning and recall.

The third assumption relates to the student's familiarity with other European languages. Etymological instruction presupposes a basic familiarity with other European languages, cultures and pronunciation rules. While monolingual L1 English speakers with a university level education might deny their ability to speak other European languages, they will be familiar with words and phrases such as *aide*-mémoire (French), *et cetera* (Latin), *gestalt* (German), *al dente* (Italian) and *incommunicado* (Spanish), and will have at least a rudimentary idea of the correct pronunciation of these foreign words and phrases. The ability to link letters or clusters of letters to the correct sounds (orthographic knowledge) has been shown to be critical in English L1 speakers' ability to decode words.[22]

The fourth assumption is that EI is progressive and explicit. English first language children start with the simplest word parts like *dis-* (from Late Latin) and *re-* (from Latin) and experiment with making word trees changing only one part of a familiar word to show how words change.[31] This explicit EI gradually increases in complexity until it culminates in students being able to decode complex words. Studies have found that explicit and incremental EI enhances the effectiveness of this teaching method.[29,30]

In summary the etymological approach is based on several assumptions that may not hold true for EFL and ESL learners:

- False cognates may be difficult to identify without sufficient grounding in English;
- Correctly interpreting etymological clues requires a high level of English comprehension;
- Familiarity with other European languages, pronunciation systems and cultures cannot be assumed;
- The mnemonic effects presuppose a sufficiently large vocabulary;
- Systematic and progressive EI is not necessarily present;
- Prior explicit EI cannot be assumed.

2.5. Etymological instruction in Japan

The previous section introduced EI and the assumptions on which it is based. In this section these assumptions will be examined in the context of Japan, to see if the necessary preconditions are present for EI to be fully effective.

2.5.1. Vocabulary size and the etymological method

Laufer calculates that Japanese EFL students of English at university have a vocabulary of approximately 2000 to 2300 words.[32] To put the average Japanese university student's vocabulary in context, the average English L1 high school graduate has a vocabulary of 40,000 words, approximately 20 times larger.[33]

It might be argued that medical school students are not average, but even if Laufer's estimate were doubled it would still fall well short of the goal of at least 3000 to 5000 word families that other studies have found would indicate a reliable chance of successfully inferring the meaning of unknown words.[34,35] Previous research has found that English L1 students with a similar vocabulary size were unable to reliably infer the meaning of unknown words.[28]

The reason for the relationship between vocabulary size and the ability to successfully guess the meaning of unknown words becomes clearer when one considers the process used to break down an unfamiliar word, the subtraction method.

For a simple illustration of this method consider the prefix *re-*, meaning 'again,' and the words, renal, rectum, retroactive. Someone unaware of the meaning of these words and trying to assess if they related in some way to 'again' would subtract *re-* from the word, and find that the remaining portion did not resemble any word or word part that they knew, and so was not related to *re-*.

Now consider relapse, realign, react. When the prefix *re-* is removed the remaining portion is an English word or word part, in this case lapse, align and act. These are all

English words or word parts, so it seems like these words relate in some way to 'again.'

The subtraction method presupposes a sufficiently large vocabulary to recognise the remaining portion of the word, and while someone with a vocabulary of less than 5000 word families would probably recognise the word 'act' they are unlikely to know 'align' and 'lapse.' This means that even if one of the word parts is known then someone with an insufficiently large vocabulary may be unable to identify that the remaining word part has meaning.

A smaller vocabulary may also influence the success of EI in other ways. Consider the word, 'analgesia.' Using the subtraction method a student well instructed in using EI to decode medical terminology might try *an-* and be left with *-algesia*, or *anal-* and be left with *-gesia*. Neither are recognizable root words, as *-algesia* does not conform to the normal patterns for the Greek word *algos*, meaning pain, which normally appears as *-alg(i)o*, or *-algia*, or *-alge(si)*, and removing *anal-* leaves *-gesia*, which is not a root word. Someone with a larger vocabulary may know a similar word, such as hyperalgesia, which contains the same irregular use of *-algesia*, or will have a large enough vocabulary to contain multiple instances of similar words where a letter needs to be added or subtracted to make the word fit the normal pattern, and would know to just ignore the extra letter.

These examples highlight just two ways that vocabulary size can influence the ability to unlock the benefits of EI, and make it unreliable. An unreliable strategy may be used in the short term, but if it isn't reliable it will eventually be abandoned.[25,29] This suggests that the average Japanese medical student is unlikely to instinctively guess the meaning of unfamiliar words.[29,30]

Vocabulary size also relates to another assumption of the etymological approach. One of the arguments for the etymological approach from psycholinguistics is that EI aids recall by making students aware of the meaning of individual word parts, and provides multiple points of connection between similar words, thereby enhancing recall. If a Japanese English student knows twenty times fewer words than an English L1 student at the same level, then it would be expected that the resulting memory structures would be less robust, and a less marked effect would be seen, or the vocabulary level may fall below the threshold for any memory enhancing benefits.

A similar phenomenon has been noted in research into vocabulary gain through reading and has been labelled as the "Beginner's Paradox,"[27] where individuals with an insufficiently large lexicon lack sufficient data to organize words by similar features and draw inferences. This "Beginner's Paradox" may also interfere with Japanese students' ability to supplement the clues to a word's meaning from explicit etymological instruction with additional clues from the context in which it is presented. This can be controlled for in the classroom situation by presenting students with material tailored to present only a few unknown words at a time, however when presented with material from outside the classroom the learner is likely to encounter multiple unknown words in a single text, and find difficulty in supplementing the etymological clues with contextual information. As mentioned before, a vocabulary strategy that proves unreliable is likely to be abandoned.

There is also a specific concern related to cognates in Japanese medical terminology. Many medical cognates in Japanese originate from German,[36] such as *rentogen* (レントゲン, meaning x-ray, from the name of the German physicist, Wilhelm Conrad Röntgen, who discovered x-rays), *kuranke* (クランケ, from the German *kranke*, meaning a medical patient), or *arerugii* (アレルギー, from the German *allergie*, meaning allergy).

Japanese students are starting with a different medical vocabulary from their Japanese L1, lacking many of the Greek and Latin cognates that an English L1 speaker possesses, and making the problem more complex than simply comparing vocabulary sizes.

It might be argued that these German words are an advantage, as English is from the same language group, however the shift from *arerugii* (*allergie*, German) to *arerujii* (allergy, English) may seem intuitive in hindsight once the meaning has been explained, but before that point it is more difficult than it seems. Consider the Spanish word *mostrar*, meaning 'to show' and two Italian words, *mostra* and *mostrare*. Which Italian word has the same meaning as the Spanish? Both are similar, but without explicit instruction it would be difficult for a learner to know that *mostrare* is the verb form meaning, 'to show,' while *mostra* is the noun form meaning, 'a show or exhibition.' Simply comparing the English vocabulary size of English L1 students and EFL students would not show this difference.

To summarize:

- Research suggests that Japanese EFL students may lack the vocabulary size required to reap the full benefits of EI.
- The beginner's paradox may prevent Japanese EFL learners from using etymological clues to learn new words more effectively.
- The presence of false cognates in Japanese EFL students' vocabularies would require explicit instruction in the method to prevent confusion.

- Students may show an interest in explicit EI during the course, when the method seems effective, but may be abandoned later if unsuccessful outside of the course.
- Many cognates present in medical Japanese originate from German, unlike English, where much of the medical terminology comes from Greek and Latin.

2.5.2. English education in Japan

Explicit EI is not the norm in Japan.[37] English instruction in general starts comparatively late for students in Japan, with the Japanese government having only recently introduced English instruction in the last two years of elementary school (grades 5 and 6 respectively, for students aged approximately 10 and 11 years old).[38] Prior to this formal English instruction only began in junior high school at the age of about 12. This means that currently most university students in Japan have only had 6 years of formal instruction in English.

The new national textbook for elementary school students in Japan, *Hi, friends!*, includes no explicit focus on etymology. Nor is there any explicit mention of teaching etymology in the junior or senior high school textbooks, although informal discussions with Japanese high school English teachers revealed that some of them had decided on their own to include some mention of the etymological approach.

As a result of these discussions, a survey of 103 second year medical school students was conducted to establish the extent to which they had received explicit instruction in English etymology. The results can be seen in **Figures 1 to 4**.

Charts 1 and 2 show that at least 25% of students lacked any explicit etymological instruction, and that at best 11% of students had received what they would consider "a lot たくさん" of explicit instruction in English etymology.

Charts 3 and 4 show that most students surveyed first received explicit EI in senior high school (39~41%), but a large percentage of students (21~24%) first received explicit EI at university.

A quarter of students had never received any explicit instruction in English etymology, and of those students who have been previously instructed in English etymology the vast majority (at least 61%) have only had "a little 少しだけ" instruction in the method.

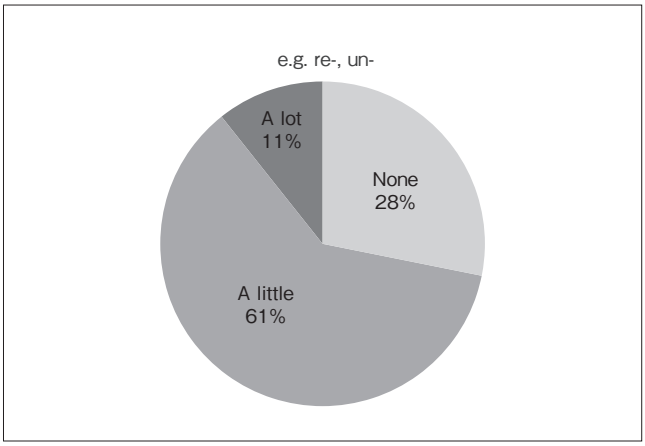

Figure 1. Basic etymological instruction

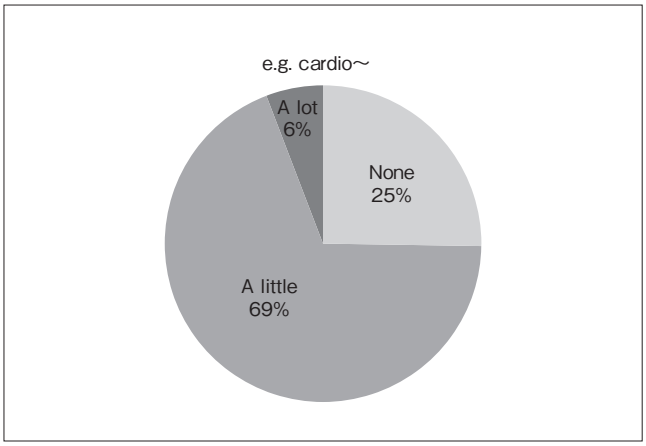

Figure 2. Complex etymological instruction

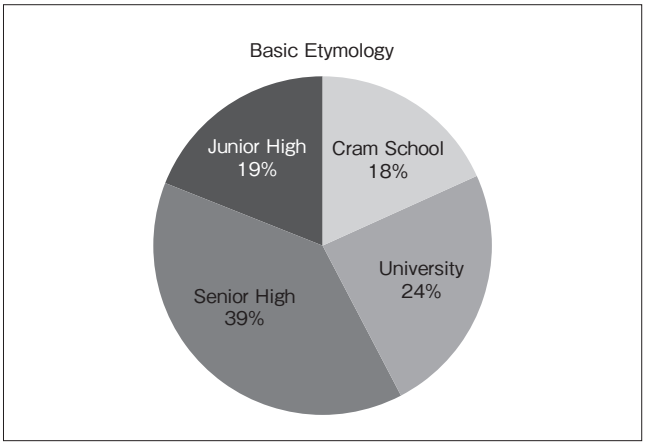

Figure 3. Where was instruction received?

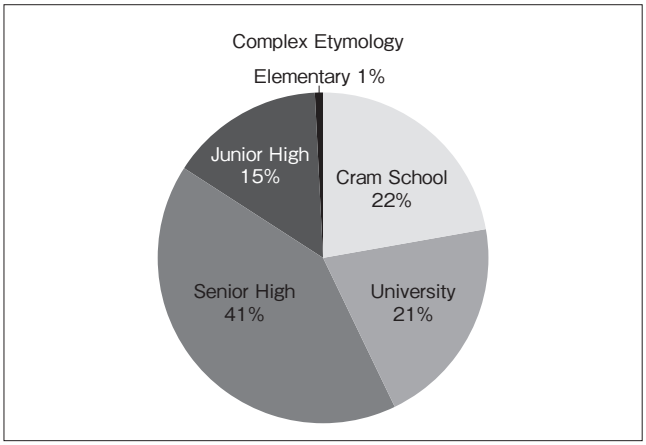

Figure 4. Where was instruction received?

This survey, and a review of the teaching materials used in primary and secondary education, strongly suggest that the systematic and progressive programme of instruction in English etymology that is the foundation of explicit EI in English L1 learners is simply not present in the Japanese education system.

Research has shown that explicit EI greatly enhances learning using this method.[29,30] If English L1 students require explicit EI over many years to grasp and apply the techniques properly then it is reasonable to doubt if EFL students, who lack a background in EI, could fully utilize the techniques after just a short introduction. Nor is the narrower context of medical terminology a major mitigating factor, with some textbooks listing more than 200 common word parts relating to medical terminology.[1,2]

Therefore:

- Evidence suggests that there is relatively little education in English etymology in Japan
- Current university students have had only 6 years of English education
- The educational background in explicit EI that is a foundation condition for English L1 medical students learning using EI is not present in many, if not most, Japanese medical school students

2.5.3. The etymological approach and the learner's L1

It is also worth considering the learner's first language (L1) as a potential confounding factor in second language (L2) acquisition. Differences in the structure of language can influence the ability of students to make use of EI.[39]

Rose[40] found that when English L1 learners of Japanese L2 were taught using an etymological approach, focusing on kanji parts and their etymology, the learners could remember the etymological origin, and hence the English meaning, but could not remember the pronunciation(s) of the kanji. Matsumoto[41] found a similar pattern, that students with an alphabet-based L1 performed worse in Japanese vocabulary tests than students with a logographic (a language where a symbol represents a word or word part, such as Japanese kanji) L1.

Rose and Matsumoto's findings suggest a fundamental difference in where meaning is recorded in Japanese and English. In Japanese the meaning is hinted at in visual clues within the kanji, but kanji that share similar parts have radically different pronunciations, so careful study of a written kanji would provide hints as to its meaning, but would provide no insights into its pronunciation.

Simply hearing an unfamiliar Japanese word would provide no hint to its meaning, as the pronunciation is unrelated to meaning. One of the reasons for this is that Japanese kanji were largely imported from China and had two (and frequently more than two) pronunciations imposed on them. The first pronunciation was the Japanese approximation of the Chinese pronunciation(s) for the kanji, however the divergent evolution of the languages and the intoned nature of Chinese make it difficult to determine an etymological link from the sound alone. The second kanji pronunciation(s) was the Japanese sound(s) currently being used for that meaning, which bore no etymological link to the kanji. A further complication is the large number of homophones in Japanese. The result is that in Japanese the kanji is the source of meaning, not pronunciation.

In English, however, the pattern is reversed for complex words. The meaning of difficult English words is hinted at in the word parts, and these are most clear when the word is spoken, as word parts tend to be pronounced as separate segments. For example, a English L1 speaker pronouncing the word 'cardiovascular' would pronounce the word parts with a tiny pause between them as *cardio-* and *-vascular* as these separate units of meaning. Even in common words like 'repeat' or 'reject' the *re-* portion is separated by a shift in stress. This is why English speakers will often sound out an unfamiliar word, as the English orthographic system provides no clues as to which word parts contain meaning.

It can therefore be seen that there are fundamental structural differences in where Japanese and English store their meaning. In Japanese the meaning is stored visually in the kanji, but the sound of the word contains no hints to meaning. In English the meaning of complex words can be derived most easily from the spoken word, although it is also possible to obtain hints from the written form if one has a full understanding of English's irregular orthography, which should not be assumed for L2 learners.

This presupposes that the individual has sufficient grounding in English to be familiar with which English words can be subjected to etymological analysis. For example non-compound words like 'bat' are not readily subject to this method, and some compounds words like 'reject' (from the French *rejecter*, originating in the Latin *re-*, meaning 'again' and *-icere*, meaning 'to throw') are extremely difficult because of the degree of linguistic drift. Explicit EI assumes that the learner knows the meanings of these words already, and is using them exclusively for more difficult compound terms such as cardiovascular, haematoma and tachycardia.

Finally, orthographic differences may be important for reasons of brain structure, as there is research that suggests that logographic and alphabetic input is processed in differ-

ent areas of the brain, making the difference deeper than just learning, but rather structural in nature.[42]

Therefore the research suggests that the student's L1 and orthographic differences may influence how students approach unfamiliar words.[43,44]

2.5.4. The etymological approach and teaching variables

Yamazaki and Yamazaki's[13] paper on explicit EI also suggests that some Japanese learners of English may experience difficulty in seeing the relevance of English etymology to their studies. In Yamazaki and Yamazaki's study the students could not see the connection between the Latin word parts they were being introduced to and the English words. The students' lack of understanding was such that they described the Latin as "useless" and students became demotivated.

The research by Yamazaki and Yamazaki lends support to the proposition that Japanese students may lack the educational background in English that would allow them see the relevance of EI, and suggests that it is necessary for teachers to explicitly demonstrate how English etymology is relevant.

Yamazaki and Yamazaki's research also shows that the subject matter being taught is relevant. The context of their paper was a class on reading newspapers. The highest density of words with strong Greek and Latin roots is found in scientific and medical writing, not in texts such as newspapers. As a result the subject matter in Yamazaki and Yamazaki's research may have had a lower density of words suitable for etymological analysis, providing fewer examples for students to analyze, and thereby lowering student motivation as EI seemed of limited utility.

The Yamazaki and Yamazaki paper highlights the possible importance of students' perceptions of the usefulness and relevance of the EI approach as variables in student motivation. It may also illustrate how students could respond when they have finished a course of EI and find the techniques they have learnt are unreliable outside of the classroom because they lack the vocabulary to separate word parts, lack the knowledge to identify what words may be subjected to etymological analysis, or are confused by false cognates.

While Yamazaki and Yamazaki do not speculate on the effect of culture it may be that the perception of Latin and Greek as "useless" may also have a cultural and educational component. English L1 students are made aware of the interconnected nature of European languages quite early, and of the input from Latin and Greek, and so the usefulness of Latin and Greek does not need to be demonstrated, however to Japanese students the link may not be apparent for cultural and educational reasons.

Yamazaki and Yamazaki's research demonstrates that:

- Explicit instruction is required as students will not implicitly understand the value of etymological instruction;
- Without demonstrable relevance students' motivation levels will suffer;
- Lacking the cultural and educational background assumed in the etymological method may diminish the perceived usefulness of EI.

3. Conclusion

Explicit EI is a well-established and widely-used approach in English L1 countries; however it makes a set of assumptions that do not necessarily hold true in Japan and other EFL environments.

It seems that many of the assumptions that underlie and enable the special benefits that make explicit EI valuable as a tool for instructing medical students are not being met in Japan for the majority of medical school students.

Explicit EI possesses a high level of face validity; it seems on the surface of things that it should work, and it may work for exceptional students or when the course materials can be controlled to provide examples that can readily be decoded using the word parts provided. However, when we go beneath the surface level and examine the underlying assumptions then there seem to be legitimate questions regarding how effective explicit EI really is in the context of learning medical terminology in Japan.

This article opens up numerous avenues for further research into explicit EI, for example:

a. Are Japanese medical students who receive explicit EI able to unlock the full benefits and out-perform students who have been instructed using other techniques?
b. After a course of explicit EI do students persist in trying to decode unfamiliar words using the word parts that they learnt? Or does the behavior cease when the students are exposed to a large number of words that defy analysis?
c. If the full benefits of EI are not being unlocked, then where does the key lie? Is it a question of English vocabulary size, the number of Greco-Latin words in their mental lexicon, the amount of explicit EI, the number of times they have been exposed to explicit EI, or some other factor or combination of factors?

Explicit EI is the preferred method of instruction for medical students for good reasons. Studying medicine involves learning a large and specialised vocabulary of medical terms, which causes problems even for English L1 stu-

dents. The benefits potentially offered by EI, such as enhanced memory, word guessing and the ability to better understand words are particularly useful to medical students. The intention of this article is not to tear down EI, but rather to raise the possibility that the full benefits of this method are not being realized for most Japanese medical students, and to stimulate research into the area to confirm if this is the case and, if it is the case, then to determine what steps need to be taken to address the situation and unlock the full benefits of explicit EI for Japanese medical students.

Acknowledgement

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The 17th JASMEE Academic Meeting（第17回日本医学英語教育学会）
Special lecture（特別講演）

Developing argumentation skills in English writing classes

(Tokyo Garden Palace, Tokyo, July 19, 2014)

Kyoko Oi
Chiba University

1. Importance of writing in Japanese education context

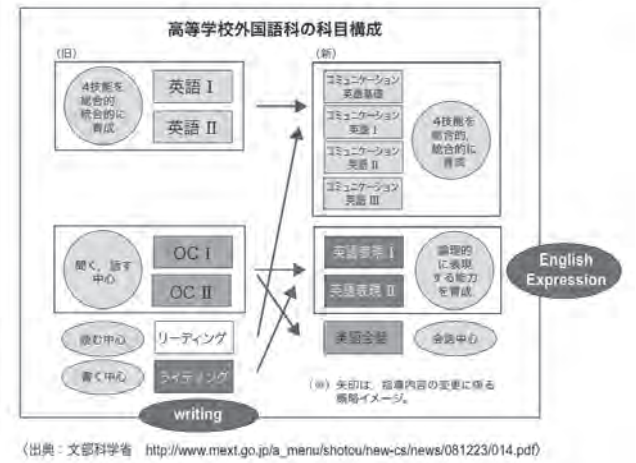
At the turn of the century, Warschauer[1] in his article titled "English as a requirement of international communication" states:

"A large and increasing number of people, even if they never set foot in an English-speaking country, will be required to use English in highly sophisticated communication and collaboration with people around the world. They will need to be able to write persuasively, critically interpret and analyze information, and carry out complex negotiations and collaboration in English."(p.518)

I agree with his claim in that young people in the future should learn to be able to **write** persuasively, critically interpret and analyze information, and carry out complex negotiations and collaboration in English.

However, as is shown in **Fig. 1**, after the recent change in the *Course of Study*, stipulated by the MEXT, the subject "writing" has disappeared from the high school curriculum.

Although it was integrated in a new subject tilted "English expression," we cannot but fail to notice that "writing" has to take a back seat due to this change.



〈出典：文部科学省　http://www.mext.go.jp/a_menu/shotou/new-cs/news/081223/014.pdf〉

Fig. 1. High school English subjects as of 2013 高等学校外国語の科目構成（旧指導要領から現行指導要領への変化）

We should notice, though, that the MEXT claims that there is a need for fostering thinking abilities in Japanese education. In the currently running *Course of Study*, as a fundamental motto, the following principle is included:

"to **foster thinking ability, judgment, expressive ability, and problem-solving ability** across all the subjects." In Japanese these are: 思考力，判断力，表現力，問題解決能力. I think these abilities can be incorporated under the umbrella terms of "**argumentation**."

Today I would like to talk about what we can foster in teaching L2 (second language) writing, i.e. English writing. There are two aspects: one is the linguistic aspect. Through writing students will learn "how to express in English what they want to say in Japanese." Another aspect is thinking ability: "how to convey the meaning to the reader and how to convince the reader with their ideas." Today, I will mainly talk about the second aspect of the abilities writing will foster. I will also use the term "argumentation" to refer to these abilities. The point I would like to posit today is that writing fosters thinking ability. This idea of mine is well represented by a remark Raimes[2] made in 1983: "Composing means expressing ideas, conveying meanings. Composition means thinking."

2. Argumentation and academic English writing

Andrews[3] advocates the need for teaching argumentation in higher education as follows (p. 1):

1. It is important to be **able to argue rationally in a civilized society.**
2. **Advancement in knowledge** often comes via argument.
3. Argument is about **clarification** as well as **persuasion**.

He further gives a definition of argumentation, stating that it is "a logical or quasi-logical sequence of ideas that is supported by evidence" (p. 2). In addition, he considers it

Fig. 2. The relationship with academic English and other writing genres

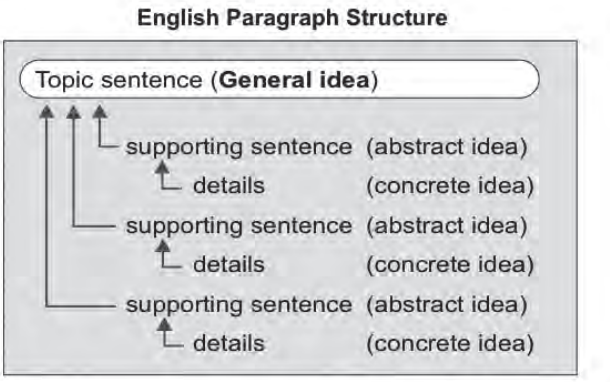


Fig. 3. English paragraph structure

as one of the "**generic skills**" that establishes the foundation of every dimension in higher education. Therefore, we all must learn "argumentation" at university.

Now where should argumentation be taught at university? It may be possible to teach argumentation in different types of English courses. Today I would like to posit my opinion that argumentation be best taught in academic English writing classes. That is because many of the skills and strategies learned in academic English can be transferred directly to the study of technical information, as is shown in **Fig. 2**.[4]

Let's consider what academic English writing is. According to Dillon,[5] one of the features of academic writing is the rationality that accompanies logic and argumentation structure. Then, what is argumentation structure? I would posit that the structure of an English paragraph itself presents an "argumentation structure," as is shown in **Fig. 3**.

Bean[6] also claims that the writing process itself provides one of the best ways to help students learn the active, dialogic thinking skills valued in academic life (pp. 18-20). That is because in order to construct the paragraph in such a way as to possess a logical, hierarchical structure, it invariably requires analytical or argumentative thinking.

However, it is a tough job to teach argumentation to Japanese students. Nisbett[7] claims:

…the whole rhetoric of argumentation that is second nature to Westerners is largely absent in Asia. North Americans begin to express opinions and justify them as early as the show-and-tell sessions of nursery school ("This is my robot; he is fun to play with because …") (p. 73).

In addition, there is Hind's[8] famous dichotomy of "writer-responsible language" vs. "reader-responsible language." In a "writer-responsible language" such as English, the writer leads the reader in the direction the writer intended. That means the writer has to take pains in order to have the reader understand exactly what the writer intends to communicate. In contrast, in a "reader-responsible language," it is like a "stepping-stone" where all that the writer does is just to place ideas one after another, making the reader connect those ideas to sustain the discourse. So, for Japanese students, who are used to this kind of writing style, it is a big change to employ the "writer-responsible" way of writing in the first place.

Furthermore, in English there is an aphorism that says, "Tell them what you are going to tell them. Tell them. And tell them what you have told them." In other words, you have to repeat the same thing three times. Then people understand what you want to say. This aphorism corresponds to paragraph writing in that the "Tell them what you are going to tell them" part corresponds to the topic sentence of a paragraph, the "Tell them" part corresponds to "supporting sentences", and "And tell them what you have told them" corresponds to the concluding sentence of the paragraph. Also in English writing, there is an idea of "Burden of proof," in which one has to be responsible for what one says. That's why we see many examples of uses of "because" in English utterances or writing.

Let us now take a look at how the definition of "to argue" is presented in dictionaries. According to OALD, "to argue" means "to give **reasons** why you think that something is right/wrong, true/not true, etc., especially to **persuade** people that you are right." This derives from a Latin word that means "make clear, prove, accuse." In contrast, the definition of argument (議論) in Japanese is:「互いに自分の説を述べあい，論じあうこと。意見を戦わせること。また，その内容」(広辞苑) [State one's ideas to each other and discuss them. Contend one's opinions against another person's.] There is no mention of "reason" or "to persuade" in this Japanese definition.

So the students who are used to this kind of writing style initially tend to employ the same kind of writing when they write in English.

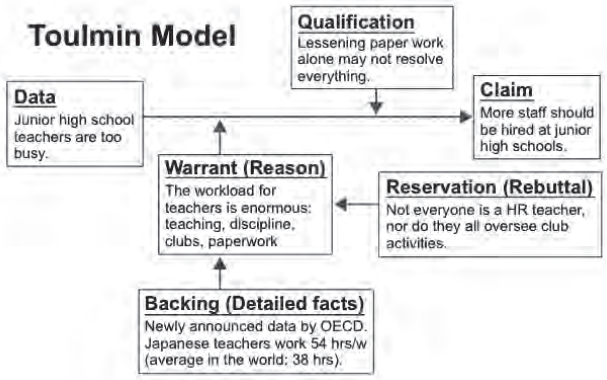


Fig. 4. Toulmin model with an example case description

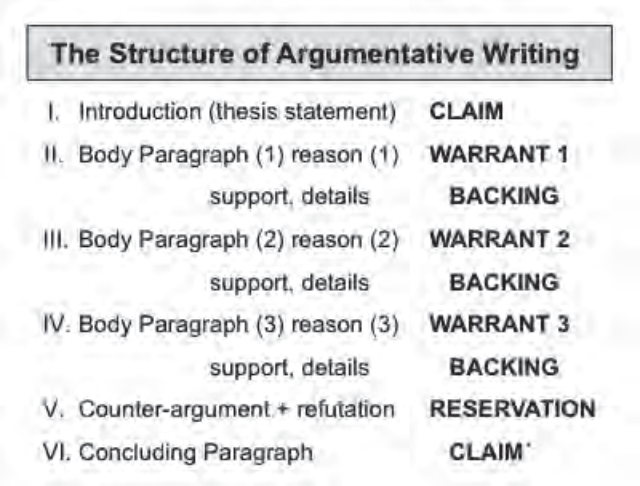


Fig. 5. The structure of argumentative essay/paragraph with Toulmin model terms

3. What I teach in my academic writing class

Now I would like to show how I conduct my academic writing course. The following is a list of objectives in my writing class.[9]

1. Follow the format of each genre of writing
2. Make an **explicit and solid argumentation**
3. Write in a good paragraph/essay structure
4. Use appropriate transition words
5. Write in an objective tone
6. Write in a formal style
7. Write with correct grammar
8. Write using varied sentences
9. Use abstract and refined vocabulary
10. Use correct Spelling

(大井, 2010)

In particular, in order to attain the objective of #2, I teach students by employing "Toulmin model",[10] take "Inner-dialogic approach," and give feedback.

Today I would like to show how we can utilize the Toulmin Model in teaching writing. **Fig. 4** shows the basic structure of the Toulmin Model with a case where it is applied.

This can be interpreted as follows:

- You hear and witness that junior high school teachers are leading extremely busy lives. (**DATA**)
- Therefore, you want to claim more staff should be hired at junior high school to lessen at least the clerical jobs of the teachers. (**CLAIM**)
- Then you would like to present the reason that junior high school teachers are too busy with the enormous workload of teaching, discipline, clubs, paperwork (**WARRANT**)
- The statement can be strengthened by the specific evidence, especially the newly announced data by OECD that reported that Japanese teachers work 54 hrs/w, while the average in the world is 38 hrs. (**BACKING**)
- Then you qualify your statement stating that not everyone is a HR teacher, nor do they all oversee club activities, in order not to invite a counterargument. (**RESERVATION**)
- Lastly you qualify the strength of your claim, thinking about the extent of the statement. (**QUALIFICATION**)

This completes your argument that "Japanese junior high school teachers are too busy, so more clerical staff should be employed."

If you convert the Toulmin model into the structure of the essay (paragraph), it can be shown as in **Fig. 5**.

In my class, I employ the Toulmin model in teaching argumentative writing among other things related to academic English writing.

I would like to show the students' reflections that they wrote after they had taken my writing course.

- Through repeated writing of assignments, I started to write from a deeper point of view. For example, I started to consider whether my writing was really objective and whether there might be an opposite point of view. (T.S.)
- At first I just tended to write my opinion intuitively. Then I started to ask myself: where did my instinctive views come from? What was the basis of my point of view? (E.T.)
- Before (this class) I just wrote down what I thought. There was no basis to my ideas. However, after taking this class, I realized I had to add further information to support my argument. Compared with before, I really became better at thinking of my reasons and foundations of my argument before writing. I came to ask myself, "Can you really say that?" and stopped writing just any old thing. (K.S.)

4. From my empirical study (Oi, 2011)[11]

I conducted a pre-post study to investigate how the students' writing changed through my one-semester-long instruction with an emphasis on argumentation. I collected the students' writing both in English and Japanese on different prompts respectively. The results revealed that:

(1) Some students acquired argumentation skills in English writing.

(2) Through learning English academic writing conventions, Japanese learners learned a logical/dialogical organization that is inherent in English paragraphs/essays, and some of them came to possess argumentation skills as a part of their **multi-competence**.[12]

(3) Japanese learners of English who understood the necessity of using the argumentation skills they had used in writing courses utilized these skills even when writing in Japanese.

5. English paragraph writing styles adopted into Japanese writing

In the books and articles that are on the market in present-day Japan, we can find an increasing number of instances where an English paragraph structure model is adopted into Japanese writing. Also, argumentation style can be a powerful tool to utilize in presentations. Among the abilities to be fostered at the undergraduate level（学士力）specified by the Central Council for Education（中教審）, logical thinking ability, and problem-solving ability are mentioned as part of the generic skills to be learned at university. These skills can be termed argumentation.

6. Conclusion

I have claimed that teaching argumentation skills is necessary at university and that it can be best achieved in academic writing classes. I believe that the argumentation skills cultivated through this process are useful in a wide range of social situations. It is important that we train students in the skill of critically evaluating the various issues and problems that they encounter in their daily life through logical and objective thinking and to find ways of solving those problems precisely and persuasively in a concise and convincing manner. Furthermore, this ability will serve the students well not only while they are at university but also in their future employment. I strongly believe that we the teachers have a vital role to play in cultivating these skills through secondary school and university writing classes.

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第17回日本医学英語教育学会
招待講演
生命科学系総合大学におけるグローバル化推進の現状と計画

（東京ガーデンパレス，2014年7月19日）

岡安　勲
北里大学名誉教授・前学長

1. はじめに

私どもの北里大学はグローバル化が遅れておりますが，私たちが悩みながら進めてきました取り組みが皆様方にご参考になればと思い，お話をさせていただきます。北里大学は生命科学の総合大学ですので，そういう枠の中でのこれまでの私たちのグローバル化の取り組みを紹介して，後半には今後の計画をお話させていただきます。

2. グローバル教育とは

グローバル教育とは，相互留学などによる単なる国際化ではなくて，世界水準にあう教育・研究システムの構築であり，またそのための組織改革が主たる目的と理解しています(**図1**)。

現在，TPPの交渉が進んでおります。TPPが成立しますと，農業・水産業関連だけではなく，教育や医療サービスの領域でも国境が無くなります。そうなると，学生が単位互換性を利用して，国内外の大学を自由に行き来して学ぶということが現実化してまいります。その際に，世界水準の教育・研究を整備していない大学は学生から相手にされなくなるということになります。

特にわが国では少子化が進んでおりますので，このような事態になりますと，人材育成という観点からは大変大きな問題です。従って，「世界水準の教育・研究」を整備することは，喫緊の課題です。

3. 生命科学・医療系大学のグローバル教育導入の困難さ

そこで，私どもは，グローバル化を目指して遅ればせながら，国際部を開設しまして，大学全体の国際化を束ねていくことにしました(**図2**)。そして，大学・各部門の英文ホームページを作成して，世界のどこからでも本学の状況がわかるようにしました。

さて，実際にグローバル化を進めるにあたり，理系・医療系の大学では，留学制度を作っても学年制を敷いていること，また卒業時に国家資格試験を控えていることから，容易には英語での教育など，相互留学制度の準備は進められません。その中で，少人数単位の実習でのグローバル化は単位互換制もとりやすく，比較的導入しやすいと考えられます。

したがって，医学部では病院実習を中心とした短期の相互留学制度を進めようということにしました。そのために，病院実習に関しては学外との単位互換制度の導入を積極的に行ってきました。

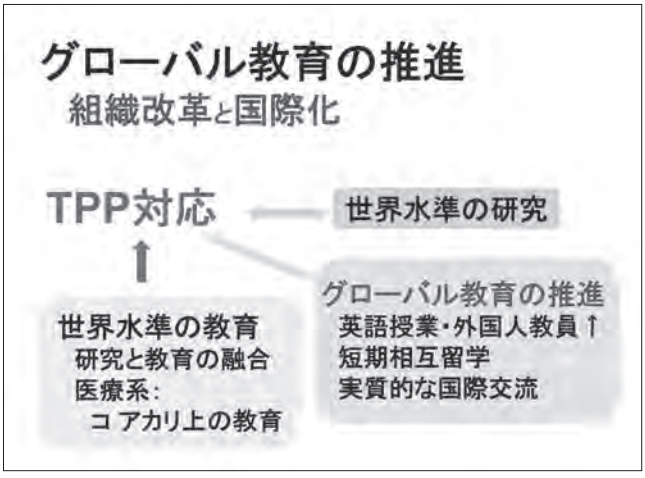
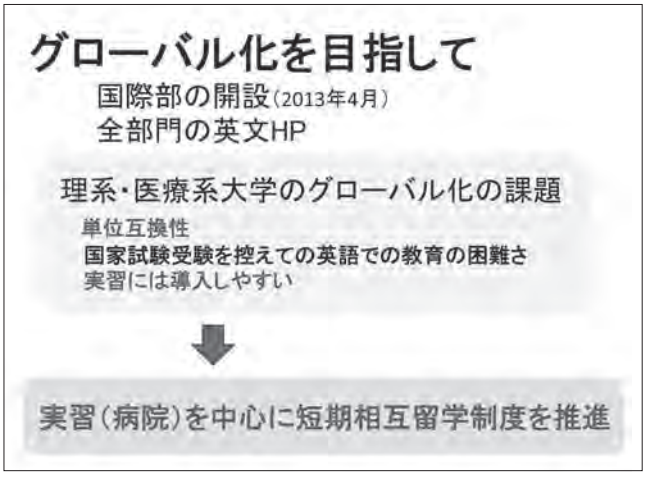


図1



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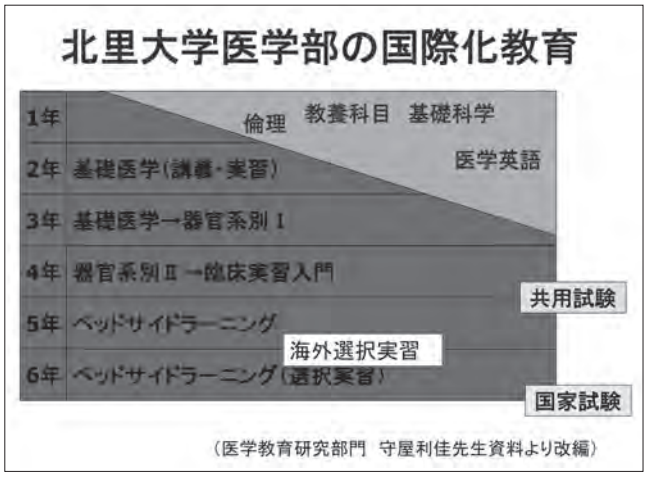

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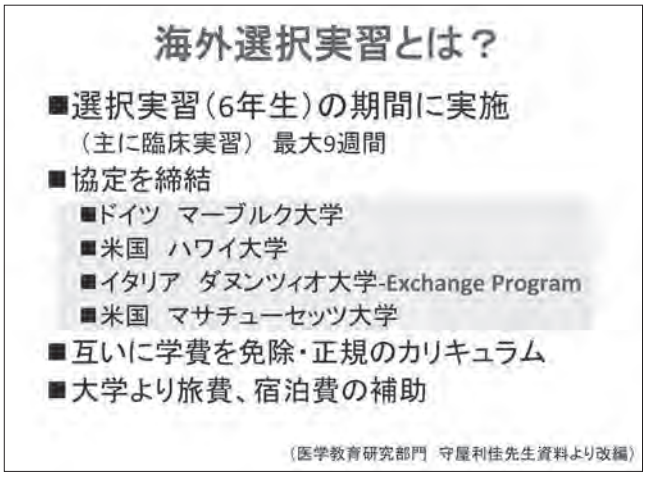

図4

4. 医学部における海外選択病院実習

続いて，医学部の海外選択実習を紹介いたします(**図3**)。

本学医学部では初年次に導入英語教育を行い，2・3年次には医学英語という枠の中で段階的に医学にシフトした英語教育を行っています。そして，6年生の前期の病院選択実習の中に海外選択実習を組んでいます。

すなわち，5年次にほぼ1年かけて各科の病院実習を行った後に，6年次には希望する科を選択して，3週間の病院実習を3回行うようにしています(**図4**)。

この時期に希望者に海外の提携大学の病院で選択実習を行い，単位履修を受けるというシステムです。

現在，海外の4つの大学病院にて1～数名単位で研修を受けています。互いに学費免除を行っており，現在は定着して評価も受け，最近は医学部から旅費や宿泊費の一部を補助しています。特にこのイタリア・ダヌンツィオ大学とはexchange programを組んでおり，向こうからも毎年4～5名の学生が本学に来てclinical clerkshipを体験しています。彼らは，修士論文レベルの研究も卒業までに課せられていますので，研究参加にも熱心であり，本学医学部の学生も彼らに大いに刺激を受けています。

学生は実習期間中，とてもハードな状況ですが，修了後の達成感もあり，まとめの報告会では充実した実習であったと好評です。最近は医学部の英文ホームページをみて，海外の大学から，本学の病院で研修を受けたいという希望が増えています。特にドイツでは，最後の学年は学外で研修を受けるシステムのようでして，積極的にアプローチしてきます。

5. 医学部・大学病院における その他の国際化の取り組み

続いて，その他の国際化の取り組みを紹介いたします(**図5**)。海外の施設との連携・協力にはその関係から3つに分けられます。

すなわち，まず1番目は，本学の教員・学生・医療従事者が海外の施設を訪問して，その先進医学・医療を学ぶことです。2番目は対等の形での共同研究や連携です。本学では前身の北里研究所の特技を生かして，感染制御関連で，タイ，インドネシア，ベトナムなど，アジアの大学との共同研究が盛んです。そして3番目は，むしろ本学が国際支援をするという連携協力です。2番目は後に少し述べますので，ここでは1番目，3番目の具体的例を次に紹介いたします。

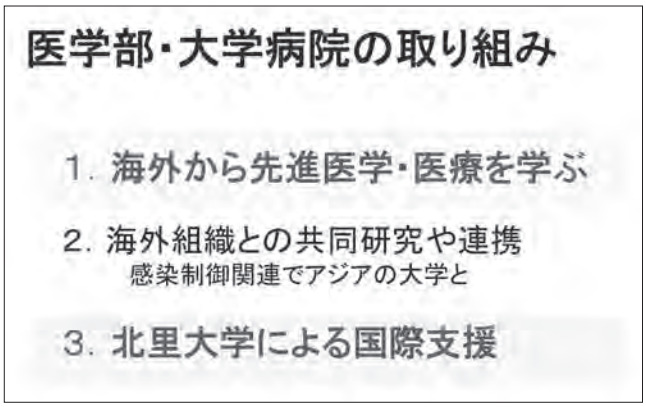

図5

1番目の海外から学ぶといいましても，この(1)のポスドクなどでの留学はどこの大学でも行っておりますので，省略します(**図6**)。

6. 大学病院における新技術導入制度によるグローバル化

本学独自のユニークなものとして，この(2)の大学病院の新医療技術導入目的で医療従事者を海外派遣するという方式を紹介いたします。

過去の典型的な例を抜粋してみました。例えば，救命救急医が薬物中毒治療の先進国である米国の施設で，そのノウハウを学んできています。また乳がんの低浸襲治療が盛んな米国のスローンケッタリングMemorial Cancer Centerに医師と看護師がチームで行って，その手技の習得，日帰

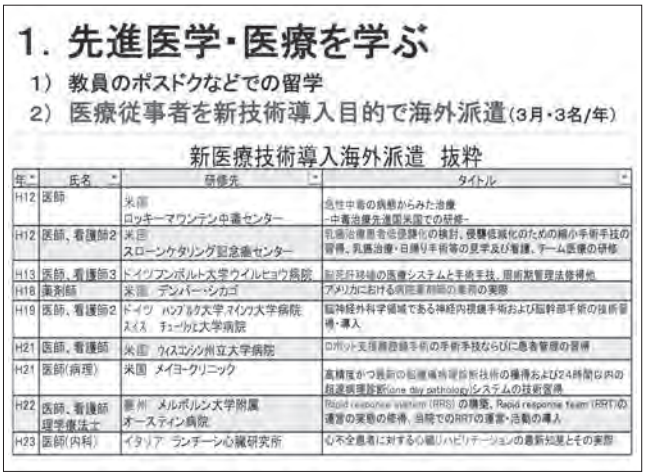

図6

図8

図7

図9

り手術，看護を含めたチーム医療システムを学び，これを本学大学病院に導入しています。同様に，病院薬剤師の実際の業務，神経内視鏡手術及び脳幹部手術手技の習得，ロボット支援腹腔鏡手術手技ならびに患者管理の習得などを，医療チームで研修して導入しています。私が所属しておりました病理部からも，脳腫瘍の病理診断を集中して学ぶためにメイヨークリニックで研修を受けました。学んで帰ってきた方々は一皮向けて帰ってきて，自分の診療に自信を持ち，その領域のリーダーとして活躍されています。

このRapid Response Systemは気道閉塞時などの緊急の呼吸確保システムです(**図7**)。この領域では，メルボルン大学のオースチン病院が進んでおりましたので，救命救急の医師，看護師，理学療法士がチームで学びに行ってこのシステムを導入しました。

これらの海外からの新技術導入システムは以前から行われてきておりますが，大学病院の医療の質の向上だけではなく，医療人がグローバルな視点でものを考えて実行していくことで，そのモチベーションの向上に大変役立っています。

7. 国際支援

7.1. 中国吉林大学との国際交流

さて，3番目の国際支援について紹介いたします(**図8**)。やはり，これも大学病院が主役ですが，中国北部の吉林大学と早くから連携して，吉林大学病院の医療人の研修を本学の病院で引き受けてやってまいりました。

毎年3名を1年間預かります。本学はチーム医療を推進していますので，医師，薬剤師，看護師，検査技師，事務職員が来られて研修を受けております。反対に本学からは，毎年吉林大学からどの領域がよいか希望を聞いて，医療チームを結成して6〜7日間派遣して，講演や医療の実務を提示してきています。

私どもの病理部でも2回ほど研修生を引き受けました。その際，単なる病理診断学を学んでもらうだけでなく，1年の間に研究もやってもらおうと研究室でも支援を行ってきました。**図8**左下写真中央の留学生は，中国でも増加している大腸がんについての小さな論文ができて，大変喜んでいました。

一昨年には交流30周年を記念して，大学病院長らとと

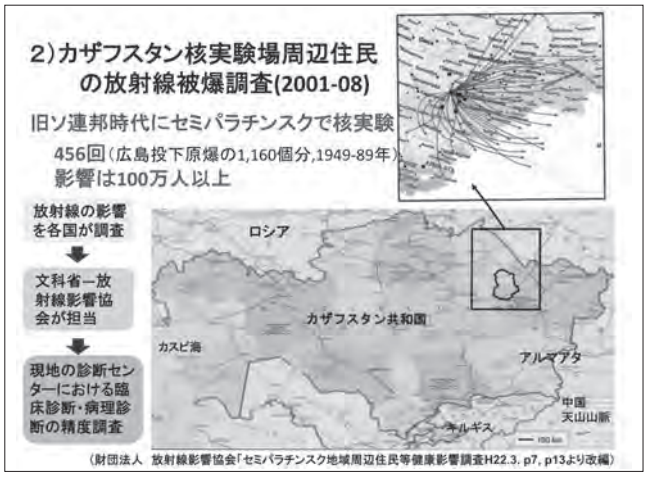

図10

図12

図11

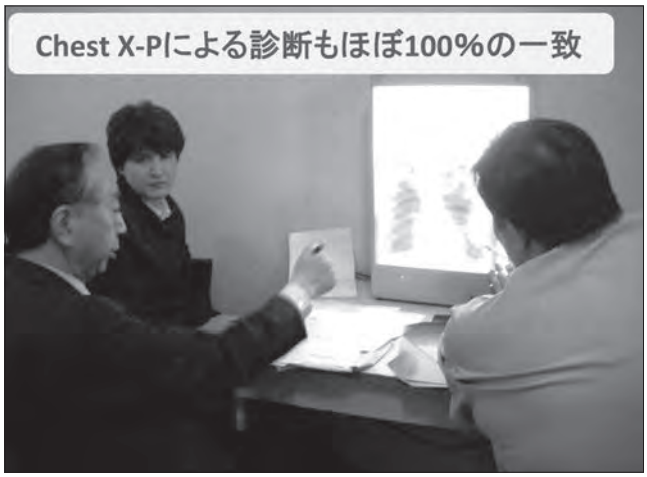

図13

もに式典に出席し，記念植樹なども行い，連携は良好です(**図9**)。ちょうど，吉林大学訪問中に，本学獣医学部の学生が夏休みを利用して，漢方獣医学を研修中でした。

中国の医学・医療は急速に発展して，現在は支援というよりは対等の共同教育・研究の体制になってきています。

7.2. カザフスタン核実験場周辺住民の放射線影響調査

次に国際支援関係として，私共が体験した少し変わったケースを紹介いたします(**図10**)。中央アジアのカザフスタン核実験場周辺住民の放射線影響調査です。旧ソ連邦時代にカザフスタンのセミパラチンスクで核実験が合計456回行われました。これは広島投下原爆の1,160個分が1949年から40年間使われたことになります。その影響は周辺住民100万人以上に及んでいるとされております。

わが国は遅ればせながら，被爆国としての経験を生かし，放射線の影響調査に入りました。その際，文部科学省がこのプロジェクトを推進し，これを日本放射線影響協会が委託されて，調査を担当しました。実際の放射線影響を調べるためには現地での死因などの臨床診断，がんの病理診断の精度を確認する必要があります。そこで，臨床医，病理医を含む疫学・臨床分科会が結成され，私は病理診断の精度確認のため，調査団のメンバーとして教室の先生らと共に，2度現地を訪問しました。残念ながら，現地では英語はいまだほとんど通用せず，会議ではモスクワから来てもらった日露通訳の方が立ち会って討論を行いました(**図11**)。

病理診断の精度はman to manで病理標本を顕微鏡下で観察して確認しました(**図12**)。細かいがんのsubtypeについては少々の違いがありましたが，がんそのものの診断はほぼ100%の一致率でした。同様に，肺の胸部X線診断も大枠の中ではほぼ100%の一致率であり，その診断は信頼できるとしました(**図13**)。

その結果，統計的解析によりますと，被爆者では，男性の中線量群で，多くの部位，特に消化器系のがんが有意に増加している，また，男女ともに被爆線量の増加につれて，循環器系，特に虚血性心疾患が有意に増加しているという結果を得ました(財団法人放射線影響協会 「セミパラチンスク地域周辺住民等健康影響調査」平成13年度～平成20年度調査結果，平成22年3月発行による)。

図14

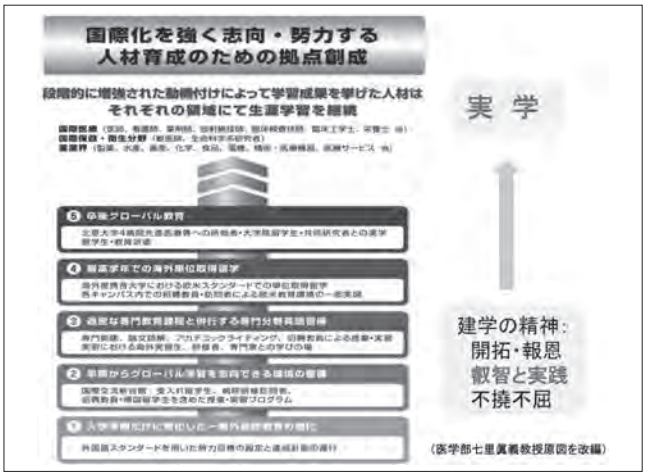

図16

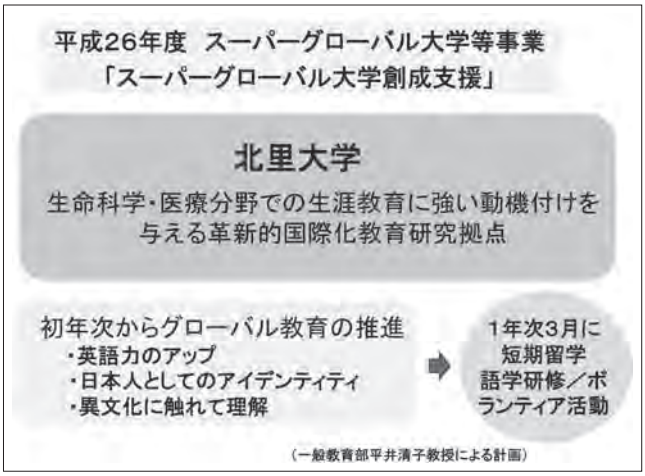

図15

図17

7.3. テレビコンサルテーションシステムの立ち上げ

その時の交流が縁となり，本学医学部病理学教室とカザフスタンパブロダール診断センターとで，今で言う遠隔地テレビコンサルテーション，すなわち病理診断が困難な症例の検討を，英語を共通言語として一緒に行いました(**図14**)。

以上，医学部・大学病院における国際交流について，これまでの私どもの取り組みをお話させていただきました。

8. スーパーグローバル大学創生支援への応募

最後に，今回JSTから公募がありました，スーパーグローバル大学等事業「スーパーグローバル大学創成支援」の応募について紹介いたします(**図15**)。

公募の際に，ハードルが高く，本学にはあまり実績がありませんので，難しい印象でしたが，トライすることによって，本学の現状や補強すべきことがわかるので，応募したしだいです。したがって，皆様からみると稚拙に感じることと思いますが，ご容赦願います。

このプロジェクトは国際部委員の七里眞義教授に主としてまとめていただきました。生命科学，医療分野では生涯にわたって学んでいく必要がありますので，このような「生命科学・医療分野での生涯教育に強い動機付けを与える革新的国際化教育研究拠点」というタイトルになりました。

すなわち初年次からグローバル教育を行うために，本学一般教育部では，「英語力のアップ，日本人としてのアイデンティティを身に付ける，異文化に触れて理解する」などを目指して，自校教育，本学学生用に整備した教科書による英語教育を行ってきております。そして，さらに3月の春休みには海外での語学研修などを計画しています。

初年次には英語学力の努力目標を設定して達成するように強化し，各学部の専門課程では，学年が進むにつれて，専門英語，論文読解，アカデミックライティング，招聘教員による授業や実習をして，国際化を意識してもらいます(**図16**)。そして，最終学年では海外の連携大学での短期実習を行い，単位を取得するようにしています。ここでは医学部では先ほど紹介しましたように海外の連携大学病院での選択実習ということになります。

卒業後は相互留学，新技術導入などによるグローバルな実学の実行です。こういった段階的な積み上げ方式は，本

図18

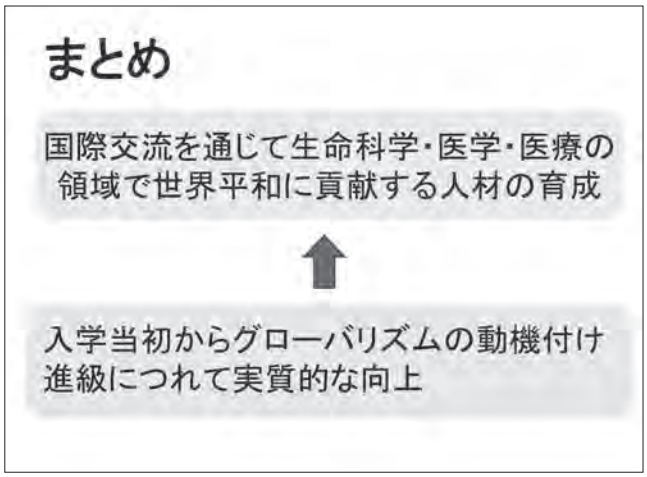

図19

学の建学の精神の一つ「叡智と実践」，そしてその先の「実学を尊重する」というコンセプトと一致します。

医学部のみならず，他学部も含めて，これまで各学部が提携した海外の大学に，目的を持って短期留学を行い，各国の学生と一緒にそれぞれユニークな実習を体験します(**図17**)。そのようなことにより，英語運用能力を有する生命科学者・医療人になろうというモチベーションが格段に上がっていくものと期待しております。

9. 国際交流における本学のセールスポイント

ここで勝手ながら，国際交流における私共のセールスポイントを，1枚のスライドで提示させていただきます(**図18**)。第1は，生命科学研究所を中心とした，天然素材を利用した抗感染症薬の開発やワクチンの開発です。アジアの発展途上国では感染症の制御が重要な課題ですので，このテーマはインパクトがあり，それぞれの国と共同研究や研究者の相互訪問などが活発に進められています。

第2は農医連携です。これは学祖 北里柴三郎先生が唱えた「医学は予防にあり」という観点から，環境，食の安全を確保することで健康を増進しようというコンセプトです。したがって，医農連携ではなくて，本学ではあえて「農医連携」として進めています。

現在は，獣医学部と協力して，漢方生薬の無農薬ないしは減農薬栽培のモデル事業を進めています。これは，現在本学が進めております，COI-Tプロジェクトの重要なテーマのひとつでもあります。また，犬などとの触れ合いによる動物介在療法を北里メディカルセンターで始めております。

こういった取り組みが国際交流・グローバル化に役立てられるものと期待しております。

図20

10. まとめ

まとめますと，入学当初から，一般教育部での自校教育に加えて，「語学教育」や「仕事と人生」というテーマ教育をとおして，グローバルな視点で社会貢献を学生にうったえます(**図19**)。そして，専門課程での実学的な学びが深くなると共に，「国際交流を通じて生命科学，医学・医療の領域で，世界平和に貢献する人材を育成」していこうというわけであります。

蛇足ながら，最近開院しました新しい大学病院には各病棟に学生実習室を作りました(**図20**)。ここを拠点にして，留学生を含めた，多彩でかつ深みのある病院実習やチーム医療教育を進めていく所存です。

謝辞

学会長の西村月満先生には，本学会での発表の機会を与えていただき，また発表内容に関しましても，示唆に富むご意見を多々いただきました。深く感謝申し上げます。また，国際部副部長，七里眞義教授，医学部医学教育部門の守屋利佳准教授，一般教育部の平井清子教授，及び北里大学病院国際学術交流運営委員会に資料のご提供と使用の許可をいただきました。厚く御礼申し上げます。

要約

大学のグローバル化とは「世界水準の教育・研究のための構造改革と国際化」である。生命科学の総合大学として，北里大学のこれまでの取り組みと今後の計画を紹介した。

理系および卒業時に国家資格試験を控える医療系大学では，海外の協定大学との実習を基盤とした，短期の相互留学制度が導入しやすく，また実績をあげられる。北里大学では，病院実習を主体とした短期の海外留学によって，グローバルな視野を身につけることを主眼に進めている。一方，大学病院では，新技術導入制度や海外の大学・病院との連携協力システムを使って，積極的に海外の医療施設や大学と情報・技術交換を行って成果をあげてきている。また北里研究所時代からの実学の実績を生かして，感染制御関連領域で東南アジア諸国との学術交流もグローバル化に貢献している。

大学在学時のみならず，生涯にわたって学び，国際交流を含めた社会貢献を行うことによって，世界平和に貢献する人材を育成していくことを大目標に掲げている。

The 17th JASMEE Academic Meeting
Keynote lecture 1

Global language teaching trends and English for medical purposes

(Tokyo Garden Palace, Tokyo, July 19, 2014)

Judy Noguchi
School of Pharmacy and Pharmaceutical Sciences, Mukogawa Women's University

The title of my talk today is "Global language teaching trends and English for Medical Purposes," and because of the time limit, it's going to be mainly global trends.

Language teaching over the past fifty years has changed dramatically. And there are three reasons for this. Number One: It has been compelled by a great need for a lingua franca. In this globally connected world of today, we need to talk to each other. And the default choice is English. It's the language of computers, it's the language of the nation that won World War II. So all of those things led toward English being the choice.

Number Two: Language teaching has been fueled by advances in technology. We can now examine natural language as we could never before. When I started my PhD work at the University of Birmingham, they had just finished the COBUILD Dictionary.[1] It had been done on mainframe computers. Today, I can do the same kind of work on my laptop, my notebook computer. So technology has drastically changed the scene.

And because of that, we have reason number three. We have now become better able to understand what's happening when language is taught or learned. Developments started in the 1970s or so when we moved away from a grammatically based syllabus and grammar translation to a notional functional syllabus. People started to say "If language is used to do things, why don't we do things with language?" That made a lot of sense. And I think now we are moving into what can be called a pragmatic syllabus. This kind of syllabus will consider how language is actually used in various situations.

So, today, I would like to give you an overview of what is happening and how it can help us with the teaching and learning of English for Medical Purposes.

A good overview can be garnered by looking at the Invited Symposia at the AILA World Congress[2] which is going to be held next month (August 2014). AILA is the Association Internationale de Linguistique Appliquée or the International Association of Applied Linguistics. This conference is held once in three years. The last one was held in Beijing. This year it is in Brisbane, Australia. Here is the list of topics for the Invited Symposia.

***Content and Language Integrated Learning (CLIL) as a catalyst for research cooperation in Europe and beyond**	***Making Applied Linguistics Matter: Opportunities for Engaging with Professional Practice**
Automatic translation	***English as a lingua franca**
***Language testing and assessment**	The Darker Side of Applied Linguistics
Language and trauma	A World of Indigenous Languages: Rights, Access, and Education
Reassessing translation	***Interdisciplinary Approaches to Language Teaching and Learning in contemporary and transnational times**

Let us focus on the ones indicated by the asterisks, which are related to language teaching and learning: CLIL, language testing and assessment, ELF, ESP and LSP. The first one listed is CLIL, or Content and Language Integrated Learning. EMP (English for medical purposes) where medical topics are taught via English would be a form of CLIL.

Language assessment issues are another important topic. In Japan, MEXT (Ministry of Education, Culture, Sports, Science and Technology) has decided to do away with the Center exam.[3] So what are we going to be doing? How are we going to be judging language learners?

Another very important issue is ELF, or English as a lingua franca. Today, when we talk to people in English, we are not necessarily talking to people who are native English

speakers. We're trying to use this language to speak with people all over the world.

And finally, this last one, ESP (English for specific purposes) and LSP (languages for specific purposes) can make applied linguistics matter. ESP and LSP offer opportunities for engaging with professional practice. This is especially important for this group of people (JASMEE members), and I will be looking at this in a little bit more detail.

There are many acronyms. The first one I would like to take up today is CEFR and CEFR-J which concern language teaching and assessment. CEFR[4] is the acronym for the Common European Framework of Reference for Languages: Learning, Teaching, Assessment. It is a framework of reference for not only English, but all languages: how to learn these languages, how to teach them, how to assess them. It is based on over 20 years of research. Actually, the ideas for CEFR can be considered to have gotten started around the 1970s when Wilkins[5] came out with a notional functional syllabus to replace the grammatical syllabus in use at the time. This eventually led to the development of CEFR which aims to provide a transparent, coherent, and comprehensive basis for language syllabuses, for curriculum guidelines, designing of teaching and learning materials, and also how to assess foreign language proficiency. CEFR is being used in Europe, and also on other continents and is now available in 39 languages, one of which is Japanese.

CEFR has proposed six levels of language proficiency: basic user (A1 & A2), independent user (B1 & B2), and proficient user (C1 & C2).[6] There are specific Can-Do lists for all language skills of listening, speaking, reading and writing. The lowest level, or A1, states that "This person can read a very short rehearsed statement." For example, "Let me introduce the first speaker." At the A2 level, the person can give a short rehearsed basic presentation on a familiar subject. At the B1 level, the person can give a prepared straightforward presentation on a topic within his or her field. At the B2, C1 and C2 levels, people really start being able to communicate with those outside their own world. C2 is amazing as you could probably be better than a native speaker in your field of specialty. What we need to aim for is at least a B2 level.

The EU language policy is plurilingualism, not multilingualism. Multilingualism refers to a situation in which a person knows a lot of languages like a native speaker of each and can use it in various forms. But that's not very realistic, when you think about how long we live and how much we have to do in our lives. As one of the speakers here said, there's so much to learn in medicine today that you couldn't possibly do everything unless you live until 200. What is more realistic is plurilingualism. It's an expansion of the individual's learning experience from home to society to the languages of other people. This is what CEFR is aiming for. In other words, it's not the mastery of an ideal native speaker model, but the acquisition of a linguistic repertory of all the linguistic abilities that are important for your field, for what you want to do with the language, socioculturally, interculturally, and practically.

Based on the European CEFR, Professor Ikuo Koike and Professor Yukio Tono's groups have worked on a CEFR for Japan.[7] This is NOT a simple translation. It's not just simply an import from Europe. No, this is based on 10 or more years of real research. It's trying to understand what's happening in Japan and how we can incorporate this kind of framework, how we can use it in Japan. So it's adapted to the English-teaching context in Japan. And it uses an action-oriented approach. It's not rote learning. It's about what are you going to do with the language you are learning.

Now, if you compare the CEFR scales with the CEFR-J scales, you will notice that while the original has six levels, the Japanese one has twelve. You will also see that most of the additional levels are at the low end of the scale: pre-A1, which is below A1. There are also A1.1, A1.2, and A1.3, which would not be even thought of for a European scale. But according to research done by Professor Tono's group, while the average Japanese university graduate should be at least at the B1 level, about 80% of them are at the A level or below.[8,9] That is the reality in Japan today.

And so that's why there is a preponderance of scales at the low levels. But things are going to start to change. Listening to the other speakers presenting today, I'm pretty sure the English language level in Japan will improve drastically and quickly.

The CEFR and CEFR-J details are available online.[10,11] They are very well thought out and worth looking into.

With that kind of framework, people are going to start saying well, why can't we use it more? This line of thinking has led to the notion of "Content and Language Integrated Learning," or CLIL. This is where educators have started trying to kill two birds with one stone. Instead of teaching English and teaching medicine, they say why don't we just teach medicine through English? That's the idea... And the thing that's interesting about this is that, in Japan, it would mean using a foreign language, not a second language. If you were in a country where English was being used, then that would be using the second language to teach. But English is not a second language in Japan. It is a foreign language. Teaching in a foreign language is a rather difficult undertaking.

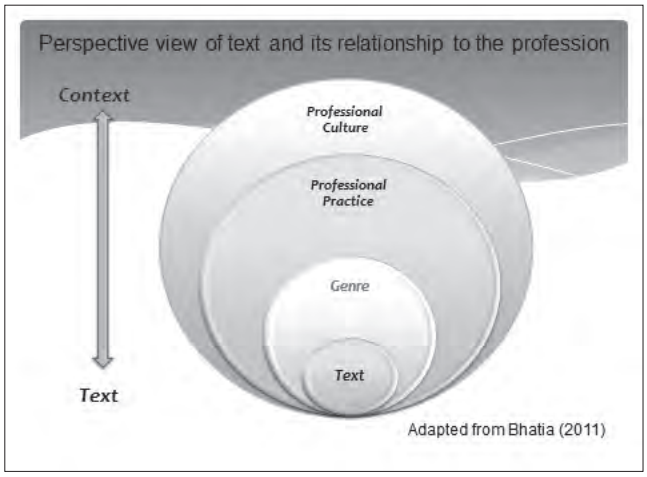

Fig. 1. Perspective of text and its relationship to the profession. Adapted from Bhatia (2011).[15]

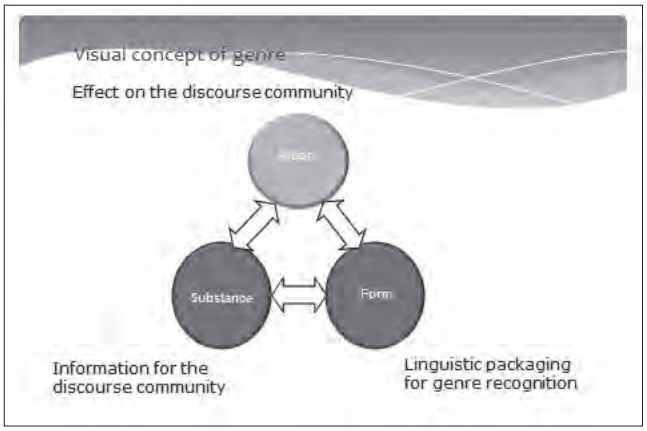

Fig. 2. Visual concept of genre.

This type of work began in the early 1990s and got the name of CLIL from about 1994. It's been supported by the CLIL Research Network.[12] CLIL is really looking at contextualized language teaching approaches. So it would mean merging education and content-based language teaching.

Now the next thing that I'd like to look at a little bit more deeply is how to make applied linguistics matter. The symposium at AILA will be looking at opportunities for engaging with professional practice. I think that's exactly what we are doing here (at this JASMEE conference): we're having English teachers work with people in the medical fields, in other words, engaging with professional practice.

This is just a part of the blurb from this AILA symposium and it's frightening. "Inadequate communication training for health professionals results in **miscommunication, a major cause of adverse events**. Applied linguists can contribute greatly to cultural change toward best patient care."[13] Please remember this word: "cultural change." It doesn't mean the standard "kimono culture" or something like that. It's a different kind of culture. "We focus on our own research, employing **discourse analysis of health communication**, to explore problems and potential solutions in this sector."[13] As I said, the kind of research we can do on the laptop or with the notebook computer now, is amazing and discourse analysis is certainly one of them.

So we have students graduating from universities with A-level, very basic level English skills, and yet we want them to be able to communicate in their professional work situations. How are we going to bridge this huge gap between the actual foreign language proficiency and the kind of proficiency they need? I think one possible solution lies in ESP, or English for specific purposes.

ESP focuses on the English needed for a specific discourse community. I've been in the pharmaceutical department at my university for a long time so I can probably talk to you about pharmacy or language education, but I don't think I'll be very good at talking to you about sports. Two key words that are extremely important in ESP are "genres" and "moves."

A discourse community consists of people who are connected by discourse, or the communications that they exchange with one another. For example, you could think of doctors in a university environment. These people have a means of communication; they are not bound by location; and they construct the knowledge in the field, for example, by writing papers to describe their research findings. The reason that there was such a ruckus about that Nature paper on STAP (stimulus-triggered acquired pluripotency) cells is that they thought that this was new knowledge that would help construct a new area. It turned out that it was not up to par.[14] But this is why everybody doing research has to write papers.

Now I asked you to remember the word "culture." The culture that they're talking about is "professional culture," or how other people in this community think about what they are doing. Somebody mentioned about how doctors think. How do they reason? What do they think about what they are doing and how they are doing it? That's professional culture.

And how they actually present this by the things that they say, the things that they write, is "professional practice." What they use for communication, the types of text, is "genre." For example, John Swales has done a lot of work on the research paper genre. In fact, one of the first things that he analyzed were the introduction sections of research papers, and this started a new field of genre analysis.

The individual text that you are looking at is the specific text that you are dealing with right now. So there is a whole range of layers, from this individual text that is actually there in front of you, to context, which is everything behind

平成26年4月3日	*Date
まるよし株式会社	*Inside address
資材購入部長　田中様	
○○まる株式会社	*Sender's address
価格改定のご挨拶	*Title
拝啓　貴社ますますご繁栄のこととお慶び申し上げます。また、毎々格別のご愛顧を賜わり厚く御礼申し上げます。	*Starting
さて、今回のご挨拶は、経済情勢の悪化と資材の値上りなどで、弊社は経常収益の苦しい立場になってきました。	*What?
これまで、全社を挙げて経費削減・人件費削減・合理化等により、コストの上昇を目指してまいりましたが、ついに商品価格を継続できない状況となりました。	*Why?
つきましては、誠に不本意ながら、別紙のとおり価格の改定を実施させていただくことになりましたので、あらかじめご通知申し上げます。	
新コスト体系の実施は○○月○○日からで、内容は別紙コスト表をご覧ください。	*When?
何卒、事情ご高察のうえ、ご協力賜わりますようお願い申し上げます。 今後ともよろしくお願い申し上げます。	*Closing
敬具	

Fig. 3. Discourse analysis of a Japanese business letter on price increase.
The letter is on the left and the moves are listed on the right.

the text. Many people only focus on the text itself. They forget all about the overall context. But increasingly, people are saying, "This background behind a text is extremely important. This can guide us. This can tell us what to do next."

Texts which are repeatedly used form genres. A genre is a repeatedly used type of communication event, which because it's repeatedly used, has developed patterns for efficiently transmitting information. And this pattern is what's very important. Here is a picture showing the three important parts of a genre. The action part is the impact the genre has on society. The problem with the STAP cell papers was the content, or the substance, was not appropriate.

The form is where English editing comes in. In other words, the research paper has to look like a research paper, it has to read like a research paper; the linguistic packaging has to be appropriate for the genre. Many of us only focus on the form, and forget all about all of the other elements. But all of these elements, i.e., Action, Substance and Form, are very important in genre.

Genre, as I said, is a means of communication. It's how you communicate with other people in your field. It could be an email message, a research paper, a conference presentation, or a patent application.

To more clearly illustrate genres, here are two business letters sent out by a company to their customer, on the matter of price increase. These are typical examples that can serve as templates. One is in Japanese (**Fig. 3**) and one is in English (**Fig. 4**). I did a little bit of analysis, which shows you what discourse analysis can tell us.

Fig. 4 shows an English version of a price increase letter.

Omega Motorcycles	Letterhead
6 Ring Road	Sender's address
Birmingham, UK B4 2TT	
3 April 2014	Date
Old Wes Motorcycles Inc. 88 High Street Houston, Texas 77006 USA	Inside address
Dear Sirs,	Salutation
I enclose our new price list which will come into effect from the end of this month.	What? When?
You will see that we have increased our prices on most models. We have, however, refrained from doing so on some models of which we hold large stocks. We feel we should explain why we have increased our prices.	
We are paying 10% more for our raw materials than we were paying last year. Some of our subcontractors have raised their prices by as much as 15%.	Why?
As you know, we take great pride in our machines and value the reputation for quality and dependability which we have achieved over the last 30 years. We will not compromise that reputation because of rising costs. We have, therefore, decided to raise the price of some of our machines.	
We hope you will understand our position and look forward to your orders.	Closing
Yours sincerely,	
Philip Johns	Signature line

Fig. 4. Discourse analysis of an English business letter on price increase.
The letter is on the left and the moves are listed on the right.

Let us compare the English and the Japanese letters. As you can see, in English, there is a lot of explanation of why the price needs to be raised. In Japanese, the explanation is much shorter. On the other hand, in Japanese, there are many polite forms such as "We trust that your company is doing well and we hope that you will understand the situation." In English, that section is just one sentence: "We hope to continue to have your patronage."

What is important here is that if you are writing an English letter, this is how you would write it. But if you're writing it in Japanese, this is how you should write it because it would be very awkward to have a Japanese business letter written with an English style.

Now let's look at a more scientific genre. Here is an abstract (**Fig. 5**) on research done by researchers in France and Canada that was published as a Letter to Nature.[1] The paper describes the transfer of carbohydrate-active enzymes from bacteria to Japanese microbiota. When I teach how to read and write research papers at graduate school, I challenge the students with this question: Can you read this in one minute and tell me what this is about? Everybody goes "Huh?" Well, at the end of this class, they should be able to do this, because they will start recognizing what hint expressions they should look for. How is this text organized?

On the right hand side of **Fig. 5** is the organization of the text and the underlined portions in the abstract itself are

Gut microbes **supply the human body with** energy from dietary polysaccharides through carbohydrate active enzymes, or CAZymes, which are absent in the human genome. **These enzymes target** polysaccharides from terrestrial plants that dominated diet throughout human evolution. **The array of** CAZymes in gut microbes **is highly diverse**, exemplified by the human gut symbiont *Bacteroides thetaiotaomicron*, which contains 261 glycoside hydrolases and polysaccharide lyases, as well as 208 homologues of susC and susD-genes coding for two outer membrane proteins involved in starch utilization. **A fundamental question that, to our knowledge, has yet to be addressed is how this diversity evolved** by acquiring new genes from microbes living outside the gut.	Background
Here we characterize the first porphyranases from a member of the marine Bacteroidetes, *Zobellia galactanivorans*, active on the sulphated polysaccharide porphyran from marine red algae of the genus *Porphyra*. **Furthermore, we show that** genes coding for these porphyranases, agarases and associated proteins have been transferred to the gut bacterium *Bacteroides plebeius* isolated from Japanese individuals.	Purpose
Our **comparative** gut metagenome **analyses**	Method
show that porphyranases and agarases are frequent in the Japanese population and that they are absent in metagenome data from North American individuals. Seaweeds make an important contribution to the daily diet in Japan (14.2 g per person per day), and *Porphyra* spp. (nori) is the most important nutritional seaweed, traditionally used to prepare sushi.	Results
This indicates that seaweeds with associated marine bacteria **may have been the route by which** these novel CAZymes were acquired in human gut bacteria, and that contact with non-sterile food **may be a general factor in** CAZyme diversity in human gut microbes.	Conclusion

Fig. 5. Move analysis of a research paper abstract. [14]

the hint expressions that inform the reader as to what the writers are presenting in this particular section. That is, where the authors are presenting the background for the research, the specific purpose for the present research, the materials and methods used for the research, what the actual results were, and what the conclusion is.

Essentially, what this abstract says is that Japanese gut microbiota differ from the microbiota of North Americans. And this is because the Japanese people eat a lot of nori, or seaweed. Now this is interesting, but I tell my students, if you stopped here, this would not be a good research paper. The important part is the concluding statement. This research started off with the question of "Why is it that human intestines have such a highly diverse variety of microbiota?" The results from this study offer one step toward an answer. They concluded that this is due to the food we eat; habitually eating certain kinds of food can help our gut develop and support a diversity of microbes.

There are two advantages to being able to pick out the hint expressions. The first is that this enables you to read very quickly. The other advantage is that you can learn to write using expressions familiar to professionals in your field. This does not mean copying or plagiarizing other peoples' work. For example, if you put the following sentence in Google search, you will get one hit: "A fundamental question that, to our knowledge, has yet to be addressed is how this diversity evolved." If you copy it, people will know that. However, if you put in "A fundamental question" you will see that it appears about 70,000 times. In other words, this is a phrase you might want to use when you are writing. How about "To our knowledge" which is used more than two million times! This phrase is a way of protecting yourself by saying that "As far as we know, nobody has done this before, so that's why we're doing it."

So these are the things that I have my students look for and use when they are writing. This is not copying; this is not plagiarizing. It is learning how to say things in your professional field. If so many people are using this phrase, maybe you should be using it, too.

These phrases are not something you can find in a grammar book or dictionary. You find them by being aware of genre and perhaps knowing how to use corpus linguistics to help you. But corpus linguistics is beyond the scope of this talk.

Before ending, I would like to briefly introduce ELF, or English as a Lingua Franca. There are now more nonnative speakers than there are native speakers of English, so we need to be able to communicate with each other under new

communicative contexts. This does not mean that your English is "poor or deficient" if you are not a native speaker of it. It's a matter of being able to understand each other. It is being able to select the most effective resources for your communication purpose. ELF speakers have at least two cultures and two languages. They can use their multicompetence, i.e., different ways of thinking, different ways of looking at the world. We don't all have to learn about British culture, we don't have to all learn about American culture. But we do need to be able to use the language so that we can communicate with people from Britain, from the United States, from Australia, and also from all of the other countries that use English as a second language or as an additional language. If you are interested, you can find more about ELF at the University of Vienna VOICE site.[17]

I would like to conclude by referring to the model 21st-century language learner proposed by Susan Hunston, when she came to talk at the JACET Kansai Chapter 40th Anniversary Conference.[18] She described the model learner as being Motivated, Self-directed and Informed. She said we should help our students become more Motivated. That can be done with the ESP concepts I have outlined in this talk. Learners need to be self-directed because language learning is considered to be a life-long enterprise. And they should be Informed by knowing how to use language tools, such as genre analysis which I have briefly shown you today. And what we're aiming for is a plurilingual — in other words, someone who can use a discourse community model to really use English that works for him/her and for the community. Thank you.

(Transcription by Christopher Holmes)

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第17回日本医学英語教育学会
基調講演(Keynote lecture) 2

脳科学から見た効果的外国語学習のコツ

Effective learning of foreign languages based on cerebral mechanisms

(Tokyo Garden Palace, Tokyo, July 19, 2014)

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英語を含む大学入試の難関を突破した医学部1年生が，帰国子女を除いて，米国大統領の演説を聴いてまったく理解できないのは，脳科学を無視した英語教育を受けたためである。赤子が母親の言語を聴いて理解できるようになるのは大脳の優位半球(ほとんどの人で左半球)にその言語を理解する言語野が形成されるからである。外国語の文法と外国語文の和訳の学習を何十年続けても，聴き取り訓練をしないかぎり，その言語の理解に必要な言語野は決して形成されない。言語野が形成されなければ，自由な会話はできない。日本における外国語教育の最大の欠陥は，この脳科学を無視した教育にある。

各言語には，それぞれ独特の好まれる表現法がある。それを無視して，日本文を単に文法的に外国語に逐語訳しても，好ましい外国文にはならない。Comfortable Englishへの意訳のコツを習得する必要がある。日本語では，強い命令は否定形で，やさしい命令(依頼)は肯定形で表現されるが，英語ではこれがまったく逆になる。日本語も英語も原始語には名詞に対応する動詞があるが，医学用語では，英語には名詞と動詞が対になって存在するが，日本語には動詞がまったくない。これを理解していないと拙劣な英文に訳されてしまう。例文に示すように，日本の医学者は，英語からみて不要な語句を愛用する習慣があるが，このような不要語句を削除しないとcomfortable Englishにはならない。

一つ一つの文の作成には優位半球の言語野が関与するが，話術のうまさ，論文の構成のうまさには，芸術に関与する劣位半球(ほとんどの人で右半球)が関与している。日本では，国語を含めて，この劣位半球の言語能力がまったく教育されていない。脳の仕組みを考慮した外国語教育の改革が急務である。

First-year Japanese medical students who have passed an extremely difficult entrance examination, which includes English, generally do not understand at all when they listen to a speech given by an American President. This is because they have been taught English with no respect to the cerebral mechanism for learning a language. A baby will learn to understand the language spoken by the mother, because the dominant cerebral hemisphere (the left hemisphere in most people) will establish a specific area to understand that language. No matter how many years you study a foreign language through grammar translation, your brain will never establish a specific area to process that language, unless you focus on listening skills. Without such a specific language area, you will not learn to speak fluently. Foreign language education in Japan has failed completely because it has neglected the cerebral mechanisms.

Each language has specific expressions and vocabulary that will make the speaker sound natural. The grammar translation method of putting Japanese sentences into a foreign language will not result in language that is natural, and native speakers might feel uncomfortable when confronted by this type of English. You should learn how to translate Japanese into natural English. In Japanese, expressions that are direct will take a negative form, while those that are indirect or polite will have a positive form. This is quite the opposite in English. In both English and Japanese, many nouns have corresponding verbs. Many nouns used in medical English have corresponding verb forms, while the equivalent nouns in Japanese have no verb forms. Unless you understand this, you will translate medical Japanese into quite unnatural medical English. Japanese physicians like to use many words and phrases that are unnecessary in English. You cannot express yourself in English that is natural or comfortable for the listener unless you avoid unnecessary words or phrases.

Writing a sentence is a function of the dominant hemisphere, while the non-dominant hemisphere, which is related to arts, functions to make a good speech or to write a well-constructed manuscript. In Japan, such language functions of the non-dominant hemisphere are not taught for any languages, even Japanese. Foreign language education in Japan should be immediately reformed with respect to the cerebral mechanisms.

1980年頃，米国の空港でハーバード大学の米人学生から，きわめて流暢な日本語で話しかけられ，朝日新聞の社説を辞書なしで読むことができることを知って大変驚いたことがある。彼は日本文化を専攻すると決めたときから，たった2年間日本語を選択科目で学習しただけだと言っていた。1960年より日本に在住する外国人医師も，日本語で医師国家試験に合格しなければならなくなり，複数の米人の軍医が，帰国してカリフォルニア大学で2年間日本語を勉強しただけで，当時の論述形式の医師国家試験に合格したと聞いたことがある。

ニューヨーク州立大学アップステイト医学部に留学したときに，ドイツ語の医学論文を読んでいたら「君はドイツ語を勉強したのか」と聞かれ，「日本の医学部ではドイツ語は必須科目で2年間勉強させられた」と答えたところ，いきなり流暢なドイツ語で話され，まったく聞き取れなかった。「会話が自由にできない言語を勉強したと言わないでくれ」と忠告された。フランス語を読める医学者は流暢にフランス語を話せた。これが米国におけるきわめて効果的な外国語教育である。

以前の西ドイツでは，共産圏からの数多くの難民をただちに難民キャンプに収容して，徹底的に会話教育を3ヵ月しただけで，全員が日常生活に困らないようになった。日本の某工業高等専門学校で，日本人のドイツ語教師が20年も教育していたときは20%の学生が毎年落第していたが，この西ドイツの難問キャンプの教師を招聘したところ，まったくドイツ語のわからない1年生にいきなりドイツ語で講義を始め，学生に話しかけた。3ヵ月で全学生がドイツ語を話せるようになり，グループ討論ができるようになり，1年後の期末試験では全員が80点以上の成績を上げた。

1980年頃，著者は東京外国語大学の非常勤講師として，1年間の日本語教育を修了した学生に「脳の仕組みから見た効果的な外国語習得法」を，大学の要請に従って日本語の漢字と仮名のみのスライドを用いて，医学用語を含めて完全に日本語で，しかも早口で講演したことがある。学生は全員，私の講演を完全に理解しており，実に流暢な日本語で多数の質問が出た。まったく日本語のわからない学生達は，入国後直ちに同大学の寮に入れられ，まったく外国語のわからない日本人の管理人や世話人と会話しなければ食事もできない状況に置かれ，あっと言う間に日本語の会話ができるようになったそうである。

このように米国でも日本でも，会話から入った外国語教育はすべて大成功している。[5-8]

英語を含む難関の入試を突破した某国立大学の医学部1年生に，医学英語の講義の前にNew York Timesの社説を辞書なしで読める人はいるかと問うたところ，帰国子女を除いて，手を挙げた学生は一人もいなかった。また米国の大統領や英国首相の演説を聴かせ，大体の内容を日本語で解答させたところ，帰国子女を除いて，内容どころか単語が一つか二つ聴き取れたのがやっとであった。

米国では2年間の日本語教育で日本語を使いこなせるところまで効果的なのに，日本では中学・高校・大学と8年間もの英語教育がまったく失敗したのは，脳の仕組みを無視した教育を行ったからである。

帰国後同級生の日本語の医学論文を英訳したところ，それを読んだスタンフォード大学外科学教授から，「この英語には文法的間違いはないが，comfortableではない」と言って，丁寧に添削していただいたことがある。これが，私がcomfortable Englishの研究と教育を始めたきっかけとなった。

ある時期，私は日本脳神経外科学会の英文の機関誌の編集に，米人の英語学者と共に携わったことがあるが，彼女がまずやったことは，英文の添削ではなくparagraphを含めた論文全体の構成の修正であった。日本では，国語を含めた言語教育で，paragraphingを含めた論文の構成やpublic speechなどまったく教育されていない。

以下，日本における外国語教育の改善すべき点を，脳の仕組みから解説する。

1. 脳の仕組み

1.1. 大脳・小脳・脳幹の機能分担

図1, 2に模式的に示したように，脳は大脳，小脳，脳幹に分かれており，かつ大脳は左右2つの半球に分かれている。脳幹は，意識・呼吸・循環といった生命維持機能に不可欠である。小脳は，大脳の指示で手足を動かす運動を細かく調節して正確さやスムーズさを与える。人間の精神活動(心)や行動は大脳の機能である。大脳の表面は大脳皮質と呼ばれ，ここに最も高度な機能を発揮する脳細胞が密集している。大脳の中心部には，視床・視床下部・大脳基底核といった脳細胞の集団があり，大脳皮質の機能を支援している。

1.2. 優位半球と劣位半球

すでに詳述したように，[2-8] 左右2つの半球のうち，人間に特有の言語機能に関与している方を優位半球，関与していない方を劣位半球と呼んでいる。右利きの人のほとんどと左利きの人の大部分で左半球が優位半球となっている。しかし，**図3**に示したように，劣位半球は視空間認知と関係し，方向感覚，芸術性のみでなく，文章構成，ひらめき等とも関与し，人間生活にとってきわめて重要な機能を発揮しているので，劣位半球の名称は不当であるとするのが，近年の脳科学者の見解である。

1.3. 優位半球の言語関係機能の局在

右半身の運動と感覚および各眼の右視野は左半球の機能であり，右半球は左半身の感覚・運動と各眼の左視野の機能に関与している。これは半身と半視野を大脳皮質と連絡する神経線維が途中で左右交叉しているからである。ところが音に関しては，各耳に入った音は，60%が対側の，

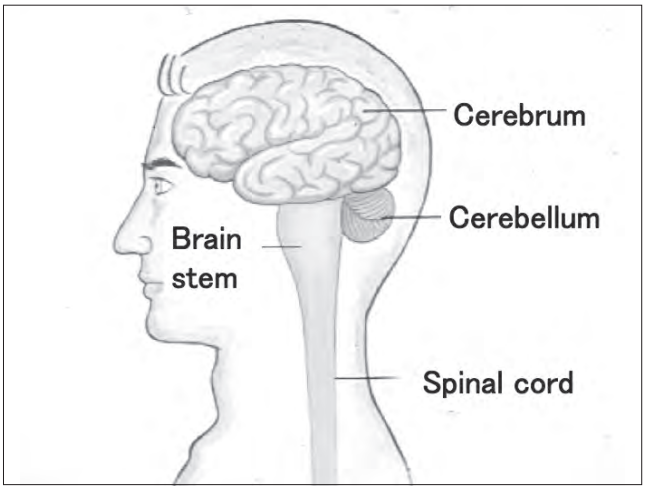

図1. 中枢神経系の頭頸部内の模式図
中枢神経のうち，頭部の頭蓋骨の中にある部分を脳，頸部とそれ以下の脊椎管の中にある部分を脊髄と呼ぶ。脳は更に大脳，小脳，脳幹に分かれる。

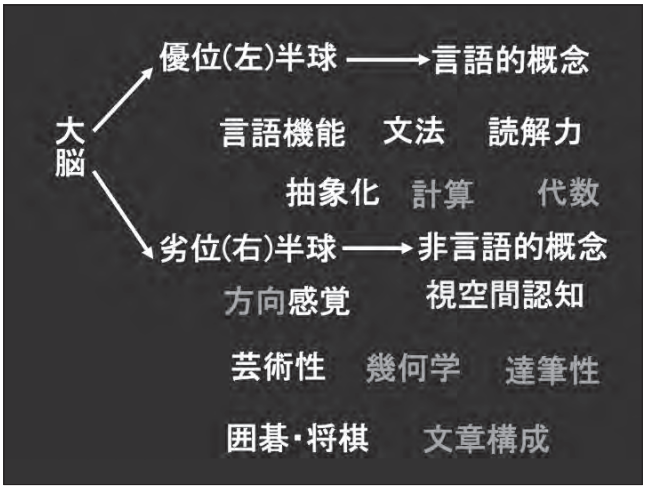

図3. 大脳半球の代表的機能の表示
大脳は左右2つの半球に分かれ，言語機能を担当する半球を優位半球と呼び，右利きの人のほとんどと左利きの人の大部分で左半球である。もう一つを劣位半球と呼ぶが，非言語的概念，方向感覚，時間感覚，視空間感覚，芸術性，幾何学，文章構成，話術，囲碁・将棋などに関与し，日常生活に大変重要な機能を担っており，劣位半球と呼ぶのは不当である。

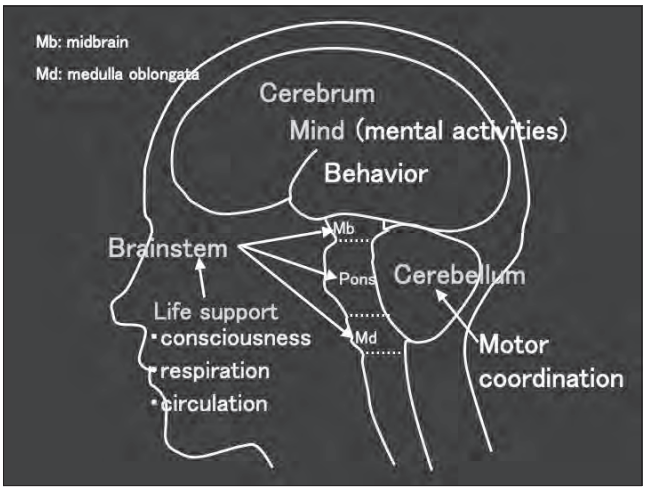

図2. 脳(大脳，小脳，脳幹)の主要な機能
大脳の表面の大脳皮質が心(精神活動)と行動を司り，小脳が随意運動の調節をし，脳幹は生命維持に不可欠の意識，呼吸，循環の維持に不可欠で，ここの機能の廃絶が脳死の基本となる。

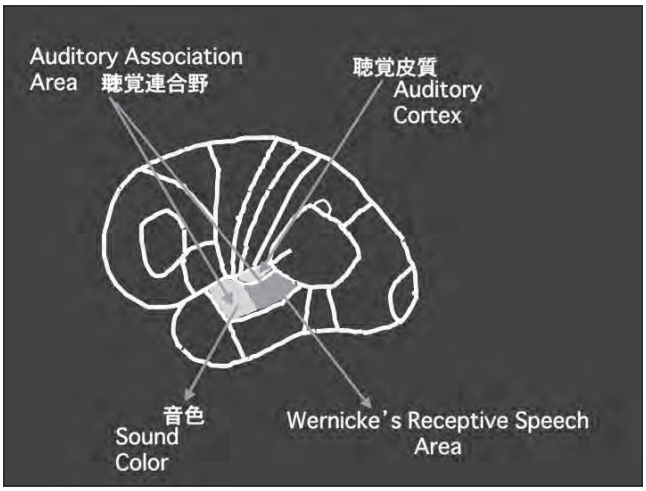

図4. 音の知覚と認知
耳に入った音は内耳の蝸牛で神経信号に変換され，60%が対側の，40%が同側の大脳半球の側頭葉にある聴覚皮質にて知覚され，その隣の聴覚連合野で情報処理されて認知される。優位半球では言葉が，劣位半球では音楽が認知される。聴覚連合野の前半では音色(優位半球では誰の声か，劣位半球ではどの楽器の音か)が認知され，後半では意味(優位半球では言葉の意味，劣位緊急では音楽の意味)が認知される。優位半球のこの部をウエルニッケ感覚性言語野と呼ぶ。

40%が同側の半球に伝えられる半交叉となっている。このお蔭で，どちらかの耳が聞こえなくなっても，健側の耳で言葉が理解できるのである。

耳から入って来た音の神経信号は，**図4**に示す聴覚皮質で知覚される。その信号は隣の聴覚連合野で情報処理されて，優位半球では言葉の意味が，劣位半球では音楽の意味が理解される。聴覚連合野の前半部では音色が理解される。優位半球では誰の声かがわかり，劣位半球では，例えば同じ周波数のドの音でも，ヴァイオリンの音なのか，チェロの音なのか区別される。優位半球の聴覚連合野の後半部では，聞いた言葉の意味が理解されるので，この部位をウエルニッケ感覚性言語野(Wernicke's receptive speech area)と呼んでいる。[2-8]

図5は，各言語機能の優位半球内での局在を示している。図中の番号はBrodmannが組織学的に大脳皮質を53の領域に分けて付けて番号である。ウエルニッケ感覚性言語野

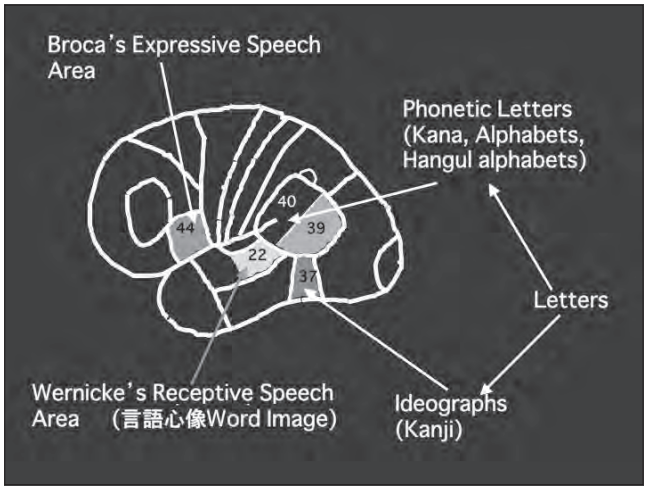

図5. 優位半球での各言語機能の局在
図中の番号は，Brodmannが大脳皮質を組織学的に53の領域に分類した番号で，組織学的に異なる部位は機能も異なると考えられている。ウエルニッケ感覚性言語野は22野の後半部に相当し，聞いた言葉の意味を理解する。音韻や単語の発音は4野の運動皮質下端で，口腔，舌，喉頭などの運動を司る部位が司り，まとまった文を話すのは44野のブローカ運動性言語野の機能である。欧米語のアルファベット，カナ文字，ハングル文字などの表音文字は39野，表意文字である漢字は37野の機能である。

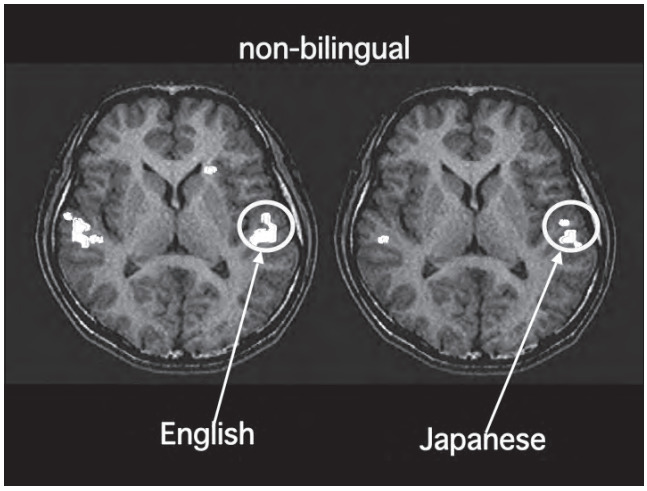

図6. 英語の医学論文を自由に読み書きできるが，英会話のできないnon-bilingualの医学者の機能的核磁気共鳴画像 (fMRI=functional magnetic resonance imaging)
脳のウエルニッケ感覚性言語野を通る水平断図。脳の各横断図の上が前方，左が右側，右が左側を示す。脳を下から見た図なので，左右が逆転する。日本語のニュースを聴いても，英語のニュースを聴いても，ウエルニッケ感覚性言語野の同じ部位が活性化され，本人は日本語のニュースは理解したが，英語のニュースはまったく理解できなかった。彼には英語を理解する領域がウエルニッケ感覚性言語野の中に存在しないことを示している。

は22野の後半部になる。44野が言葉を話す能力に関与するブローカ運動性言語野(Broca's motor speech area)に相当する。以前は，発音，発語，発話すべてがここの機能と考えられていたが，最近の研究で，音韻の発音である構音articulationは4野の運動皮質の下端の口腔の運動領域が関与していることが判明した。

文字の理解に関しては，欧米のアルファベット，カナ文字，ハングル文字などの表音文字は38野，表意文字である漢字は37野で理解される。したがって，もし39野が脳腫瘍や脳梗塞で破壊されると欧米人はすべての文字が理解できなくなるが，日本人の場合は，カナはまったく読めなくなるが，漢文の読みは可能となる。37野が破壊されると漢字しか使わない中国人はまったく文字が読めなくなるが，日本人はカナ文字が読める。

1.4. 多言語使用者Multilingualsの言語野研究からの新知見

これまでウエルニッケ感覚性言語野の全体が母国語の言語を記憶し，識別していると信じられていた。しかし近年，米国ワシントン州立大学脳神経外科のOjemann教授[1]が，脳手術中にウエルニッケ感覚性言語野を電気刺激したところ，母国語に関与する部位はきわめて小さい所に限局しており，検査した14人のbilingualの人では，例外なく2つの言語がまったく異なった部位，少なくとも2 cmは離れた部位で営まれていることが判明した。

図6, 7はすでにNHKや民放のテレビ番組「あるある大辞典」で紹介されたものである。**図6**は英語(医学英語論文)の読み書きは自由にできるが英会話ができない某医学部教員の機能的核磁気共鳴画像(fMRI = functional magnetic resonance imaging)である。日本語(NHKニュース)を聞いているときも英語(CNNニュース)を聞いているときも，ウエルニッケ感覚性言語野のまったく同じ部位が賦活されており，本人は英語をまったく理解できていない。ウエルニッケ感覚性言語野に英語のための中枢が形成されていないため，英語の神経信号が日本語の中枢に送られたのであるが，ここには英語を認知する機能がなく，理解できなかったのである。

図7, 8は日英語のbilingualである著者の脳のfMRIである。日本語はウエルニッケ感覚性言語野の後部を賦活するのに対して，英語はウエルニッケ感覚性言語野の前端部を賦活しており，両方の内容が理解できている。多国語使用者のウエルニッケ感覚性言語野には，それぞれの言語に関与する部位が別々に形成されると言うOjemann教授の理論[1]を裏付けている。

2. 脳の仕組みを活用した効果的外国語教授法のコツ

2.1. 人脳の言語能力の獲得過程

赤子は母親の言語を聴いているうちに，やがてウエルニッケ感覚性言語野に母国語を認知する言語野が形成されることによって，母親の言葉を理解するようになる。そこで自分でも理解できる言葉を話しはじめるが，母親に発音や

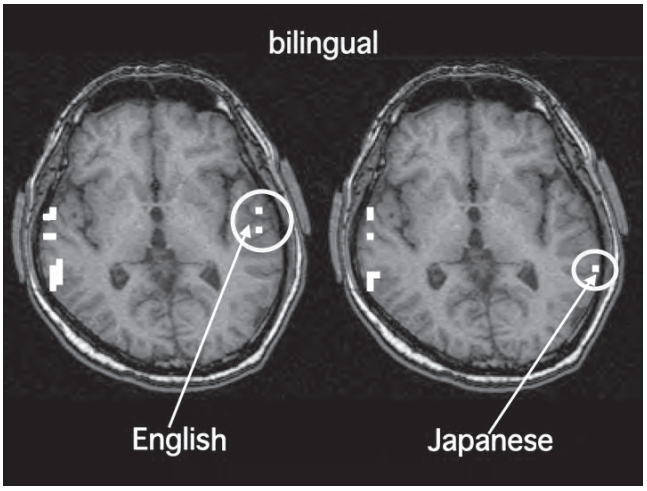

図7. 日英語の同時通訳もできるbilingualの著者が日英語のニュースを聴いた時のfMRI
日本語のニュースを聴いているときはウエルニッケ感覚性言語野の後部が賦活化され，英語のニュースを聴いているときは同野の前部が賦活されており，それぞれの言語を理解する言語野が存在することを示している。ウエルニッケ感覚性言語野の中に各言語を理解する特別の部位が独立して形成されるのが，multilingualの脳の特徴である。

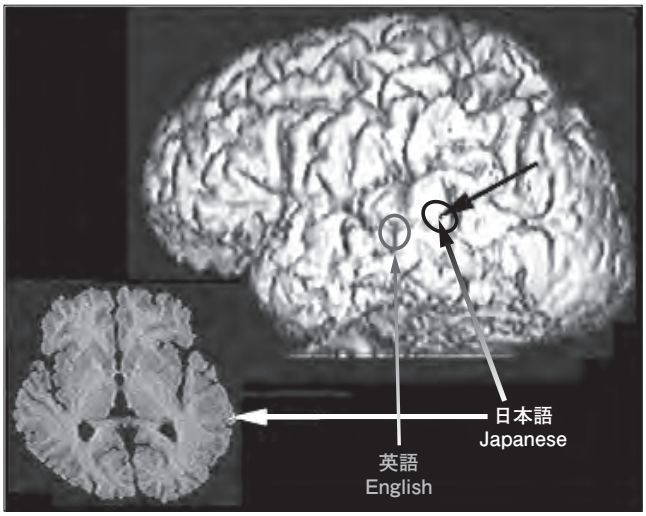

図8. 図7のfMRIを立体的に再合成した優位半球の側面図
ウエルニッケ感覚性言語野の後方が日本語，前方が英語に関与していることが示されている。

言葉を訂正されて，自分のウエルニッケ感覚性言語野でもその間違いを確認して，4野下端で構音が正確にできるようになり，さらにブローカ運動性言語野も形成されて正しい言葉が話せるようになる。

小学校に入って文字の読み書きと文法を学習して，やっと複雑な長文を書いたり，お話ができるようになる。

2.2. ウエルニッケ感覚性言語野に外国語野を形成させる教授学習法

明治政府が日本を開国した頃は，早急に欧米の文化を日本に輸入する必要があり，外国語教育は文法と単語の学習で外国文が和訳できれば十分であった。日本の産業と科学が世界一流になった今は，日本の最新の研究成果を外国にただ発信するだけではなく，国際会議で徹底的に討論できなければならなくなり，使いこなせない外国語教育はまったく役に立たなくなった。

外国語を自由に使いこなせるためには，ウエルニッケ感覚性言語野にその外国語を認知できる言語野を増設しなければならない。そのためには，聴き取りと会話の教育を徹底しなければならない。**図6**に示したように，文法と直訳の学習を何十年続けても，会話をしないかぎり，その外国語の言語野は決して形成されないことが証明された。このような人が学者になってから留学しても，日常会話はできるようになるが，ジョークまではなかなか理解できない。しかし，外国へ転勤した親についていった子供たちは，赤子と同じ言語習得をするので，発音も外人と変わらないどころか，最初からジョークが理解できるようである。

ウエルニッケ感覚性言語野に英語の言語野を形成するにあたっての留意事項を以下にまとめてみる。

(1) Nativeの言語を聴く。実際にnativeから直接教えてもらうのが最良であるが，日本人の英語教師が教える場合には，自分の下手な発音を聞かせないで，CDやVTRなどでnativeの発音を聴かせる。
(2) 初心者に教える場合に，最初はゆっくりした発音を聴かせ，段々にスピードを上げる教え方がされているが，これは脳の仕組みから言って，まったくの間違いである。ゆっくりした発音を聴かせると，脳はゆっくりした発音しか理解できない神経回路網を作成してしまう。ことにnativeが直接教える場合は親切心からゆっくり発音したくなるが，最初からnatural speedで，むしろ早口で話してほしい。「大は小を兼ねる」で早口が聴き取れるようになれば，ゆっくりした話は最初から聴ける。
(3) テキストを見ながら聴いてはならない。学生はテキストを見ながら聴く方が楽に聴き取れるが，そのようにすると脳は，文字を見なければ聴き取れない神経回路網を作成してしまい，いつまでたっても聴き取り能力は養成されない。
(4) テキストを見ないで聴くとしても，ただ聞き流しではまったく効果はない。聴きながら，人前では心の中で，一人のときは声を出して，復唱shadowingしながら聴かないと言語野は形成されない。女子学生のなかに台所をしながらただ聞き流した学生がいたが，一向に上達しなかった。
(5) 聴き取れないときは，フレーズ毎に録音を止めて復唱すると格段のスピードで上達する。

(6) 著者は60歳を過ぎてから，トルコ語，朝鮮語，中国語，オランダ語，イタリア語，ポルトガル語，スペイン語，ロシア語，ポーランド語，ブルガリア語，ハンガリー語，フィンランド語，ギリシア語などを学んだが，100時間同一言語のみ聴き続けると音韻が正確に聴き取れるようになり，そのnativeに理解される発音を正しく習得できるようになる。3ヵ月で初歩的な日常会話が可能となり，4ヵ月目には，英語の講演原稿をその言語に翻訳できるようになった。まったくの独学で，このやり方で，実際にロシアではロシア語で，ポーランドではポーランド語で講演し，聴衆から良く理解できたと評してもらった。またイタリアではイタリア語でタクシーの運転手と喧嘩もした。

(7) 日本の大学では，英語，ドイツ語，フランス語などの授業が同時に進行されるが，これも脳の仕組みをまったく無視した教育である。複数の新しい外国語を同時に習得しようとすると，ウエルニッケ感覚性言語野で混乱がおき，結局どの言語の言語野も形成されない。

2.3. 母国語の邪魔を排除する必要性

母国語の習得が完成していない幼児時代はともかく，小学校高学年になってからの第2言語の学習に当たっては，母国語からの妨害を徹底的に排除する必要がある。日本人が英語を習得する場合について考えてみる。

まず子音の発音については，日本語には存在しない“l”と“r”の区別や“th”の発音などは日本人の英語教師も熱心に教えておられる。しかし似たような発音の子音の教育はまったくなされていない，と言うより日本人の英語教師自身も，教えられていないのではないか。

その代表が，「ン」と“n”の違いである。“in”を「イン」と発音しても通じるので困ることはないが，教わらないかぎり，たとえ英語圏に成人してから何十年住んでいても，自分で気付くことはないであろう。「イ」と“i”の母音の違いはさておいて，「ン」と“n”の違いは，“l”と“r”の違いのように，はっきりと教える必要がある。

「ン」を発音するときには舌の先は下歯の後ろに位置しているが，“n”を発音するときは舌の先は“l”と同じに上の歯の後ろに来ていなければならない。したがって“n”を正しく発音すると「鼻声」になる。また「ン」はこれだけで一つの音節をなし，「ン」だけを発音できるが，“n”はこれだけで音節を形成できず，前か後に母音がないと発音できない。著者の名前の「研一」は「ケ・ン・イ・チ」と発音するが，「ン」の発音のない英語では，“kenichi”は[ke-ni-tʃi]（ケニチ）と発音される。「ケニチ」ではなく「ケンイチ」と発音して貰いたく，“ken-ichi”，“ken'ichi”，“Ken Ichi”などと米英留学中にスペルを変えたが，まったく効果がなかった。日英語のbilingualの米人牧師から，“n”の発音では“l”と同じように舌の先が上の歯の後ろに来ているので，その後に“i”が来ると“ni”としか発音できないという説明を受けて，初めて納得できた。このようなことは，今まで一度も英語の先生から教えられたことはなかった。

母音については，まず日本語の「ア・イ・ウ・エ・オ」とまったく同じ発音の母音は英語には存在しないことをハッキリと教える必要があり，かつ英語を含めて多くの外国語には多数の母音が存在するので，5つしか母音を区別しないカタカナ表記では，外国語の母音の発音を勉強できないと，ハッキリと教えなければならない。

cat [kæt]を「キャッt」，cup [kʌp]を「カッp」と発音しても，かなり近い発音が得られるが，そのような教え方では，hut [hʌt]，hat [hæt]，米語のhot [hɑt]（英語では[hɔt]）を「ハッt」と教えてはまったく区別できない。thatも“That book is good.”のときはアクセントがあるので[ðæt]と発音されるが，“I think that it is good.”のときはアクセントがないので[ðət]と発音されることなど，発音記号を使わないと教えられない。

カナの「ウ」は[u]に近い一つの母音として発音される場合と単なる長音記号として発音される場合があるために，boat [bout]を「ボウト」，bought [bɔ:t]を「ボート」と区別しても，「ボウト」を「ボート」と同じに発音されてしまう。

医学会での日本人の英語の講演を聴いていて，最初からアクセントを間違える学者は論外としても，ほとんどの日本人が，3つ以上の音節のある「長い単語」（ことに専門医学用語）では，第1アクセントの他に第2アクセントがあることを知らないのに驚いている。ここにも日本における英語教育の不十分さがわかる。さらに第1も第2もアクセントのない母音は，ハッキリと発音せずに，[ə]のように弱い母音で発音するか，ほとんど発音されないことも教えられていない。

例えばindispensableは辞書には[ìndispénsəbl]と書いてあり，第1アクセントが第3音節のe，第2アクセントが第1音節のiの上に記されている。このこと自体は正しいのだが，アクセントのない第2音節のiが[i]と記されているが，実際にはハッキリと[i]と発音するnativeはいなく，このようにハッキリと発音したら耳障りである。[i]のきわめて弱い発音である[ɪ]と発音するか，聞こえるか聞こえない弱い母音の[ə]と発音する。このようなことを頭に入れた上でnativeの発音を聞くと，聴き取り能力が格段に向上する。日本語からの先入観を排除しないと「カタカナ英語」“Japanese English”からの脱却は難しい。

3. Comfortable Englishでの表現のコツ

3.1. Comfortable Englishとは何か

ドイツ語とオランダ語，ロシア語とポーランド語，イタリア語とフランス語，日本語と朝鮮語・トルコ語のように，お互いに兄弟言語同士の場合には，文法的に逐語訳しても十分であろうが，英語と日本語のようにまったく語源の異なる言語同士の場合には，いくら正確に文法的逐語的に直

訳しても，通じない場合が多いし，また逆に誤解される危険も多い。にもかかわらず，文法的逐語的な和文英訳しか教えてこなかったのも，日本における英語教育の失敗である。

“I would appreciate it very much if you would kindly send me a copy of your most recent article.”を「もしも貴方が貴方の最も最近の文献のコピーを私に親切にお送り下さったとしたら，私は貴方を大変高く評価することでしょう。」と直訳したら，文法的・逐語的には正しい直訳であるが，日本人にはきわめて気持ちの悪い日本語である。日本人なら，「先生の最近の論文の別冊をお送りいただければ幸いです。」と気持ちの良い日本語に意訳できる。問題はこのような「気持ちの良い日本文」を上記のようなcomfortable Englishに意訳することがまったく教育されてこなかったことである。と言うより，日本人の英語教師自身がこのようなcomfortable Englishへの意訳の仕方のコツを教えられてこなかったのではないか。

3.2. 言語心理学的に見た日英語の差

日本人は婉曲話法，敬語，美辞麗句などを愛用するが，米英人の好みは直接話法，“simple and clear statement”であることをまず理解する必要がある。“simple and clear statement”で書かれたcomfortable Englishを日本語に直訳しても，「簡潔明瞭」であるので，日本人にも気持ちが良い。したがって多くの場合，英文の日本語への直訳は良い。しかし婉曲話法の日本文の英語への直訳はダメである。

3.3. “There is (are)…”は避ける

日本人は「…があります」という表現を愛用するが，英語では，もともと“be”動詞は活性のない動詞“inactive verb”なので，“there is (are)…”の表現は文を非活性化するので好ましくない。したがって，「この大学には立派な図書館があります」は，“In this university there is an excellent library.”と直訳するのではなく，“This university has an excellent library.”と意訳する。文の長さも75%と短くなる。また「この大学には英語を上手に話せる学生が多数います」は，“In this university there are many students who can speak English well.”と直訳するのではなく，“Many students speak English well in this university.”と意訳すると，文も66.7%と短くなる。この場合，canは省くことも教えなければならない。

Comfortable Englishは常に短くなると覚えていただきたい。

3.4. 命令形の日英の差

図9に示すように，日本語では強い命令は否定形を使い，弱い命令(依頼)は肯定形を使うが，英語ではこれがまったく逆で，強い命令は肯定形で，弱い依頼は否定形で表現される。

ギャングがピストルを突き付けて「動くな!」と言ったら，“Don’t move!”ではなく“Stay there!”と訳さないと，相手は動いてしまう。テレビで有名になった“Freeze!”はヤクザの言葉で，上品な英語ではないと米国の某脳神経外科教授が教えてくれた。「騒ぐな!」も，“Don’t make noise!”ではなく，“Be quiet!”と訳す。

逆に，「坊や，じっとしているのよ」は，“Stay still, honey!”ではなく，“Honey, please do not move!”と否定形で訳す。「静かにしてね」も，“Be quiet!”ではなく，“Please do not make noise.”と訳す。

ただし，名詞の命令は英語でも否定形が強い。「禁煙」は“No Smoking”，「駐車禁止」は“No Parking”，「停車禁止」は“No Standing”，「立入禁止」は“No Entrance”と訳す。

このようなことは，bilingualの日本人英語教師が教えるべきだろう。

3.5. 日本語の医学英語には動詞がない!!!

図10に示すように，原始語には英語と同様に日本語にも名詞に対応する動詞があるが，図下部に示したように，医学用語には，英語にはbiopsyを除いて各名詞に対する動詞があるが，日本語には動詞がまったくない。名詞に「する」を付けて，複合動詞にしているだけである。これに気付かないと，とんでもない和文英訳をしてしまう。以下，いくつかの例を示すが，( )内の数字はcomfortable Englishにしたときの長さの率を示している。

「血球計算を行った」は“The cell count was performed.”ではなく“The cells were counted.”(80%)，「腫瘍の全摘出を施行した」は“Total removal of the tumor was carried out.”ではなく“The tumor was totally removed.” (63%)とcomfortable Englishに意訳すると短くなる。

3.6. 不要語句の削除

日本の医学者は，伝統的なスタイルを固守して講演したり論文を書いたりしているが，そのようなスタイルは米英国にはないことをまず認識すべきである。また臨床医学の論文では，患者のことを言っているのは最初からわかっているので「患者」と言う単語は不要なのに，「患者」と言う単語を繰り返し使うが，米英人にはとても気持ちが悪い。また手術しなければ腫瘍は取れないので，「腫瘍を摘出した」とだけ言えばわかるのに，わざわざ「手術を施行して腫瘍を摘出した」とか，また「MRI (magnetic resonance imaging)が腫瘍を示した」とだけ言えばわかるのに，「MRIを施行したところ腫瘍が発見された」と長々と言うのは，言葉と時間の無駄遣いである。このような日本独特の習慣を止めないとcomfortable Englishでの医学論文は発表できない。以下に典型的な例を示す。

「患者は65歳の男性。2時間前からの突然の頭痛を主訴に入院。CT検査を施行したところクモ膜下出血の所見が得られ，MRAにて右MCAの動脈瘤が診断された。緊急手

図9. 日本語と英語における命令の違い
命令には強い命令と弱い命令(依頼)があり，そのときに用いられる否定形と肯定形が，日本語と英語ではまったく逆であることを表示した。

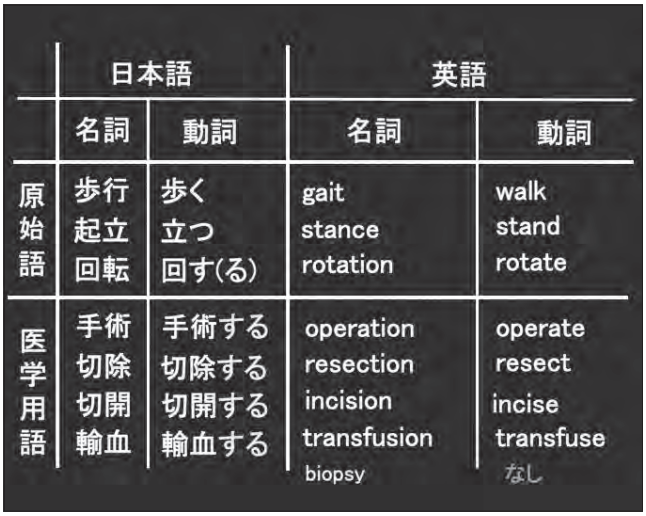

図10. 日本語と英語における名詞と動詞の関係
原始語に関しては，日本語にも英語にも名詞と動詞が対をなしているが，医学用語に関しては，英語ではbiopsyを除いて名詞と動詞の対が存在するが，日本語では動詞がまったく存在しないことを表示。

術でクリッピング術を施行した。」

これをいきなり英訳する前に，不要語句を削除しkey wordsだけにして，日本文を“simple and clear statement”に短縮する必要がある。まずこの日本文の中の，「患者は」「主訴に」「施行した」「所見が得られ」「診断された」などの不要語句を削除すると「65歳の男性が，2時間前からの激しい頭痛で入院し，CTがクモ膜下出血，MRAが右MCA動脈瘤を示し，直ちにクリッピングした」と「90語→57語→63%」と大変短い気持ちの良い日本文になった。しかし，これをそのまま英訳してはいけない。

日本の医学界では何の説明もない略語が頻用されているが，英語圏では，最初に略語を使うときは必ずフルスペルを示すのが礼儀とされている。日本語の医学論文は日本人の医学者しか読まないので「わかりきった略語に説明は不要」との考えがあろうが，英語の医学論文は，英語圏のみでなく，発展途上国も含めた世界中の医学者によって読まれることを忘れてはならない。日本人独特の我儘は国際的には通用しないことを肝に銘じなくてはならない。以上を踏まえると以下のようなcomfortable Englishに意訳される。

“A 65-year-old man was admitted with a sudden severe headache of two hours duration. Computed tomography demonstrated subarachnoid hemorrhage, and magnetic resonance angiography found a right middle cererbral artery aneurysm, which was clipped immediately.”

その他にもcomfortable Englishにするためのコツは多数存在するが，紙面の都合で割愛するので，参考文献[2]を参照していただきたい。

4. 劣位半球の活性化も要する語学教育

4.1. 声量，話術，Public Speech，論文構成の教育

国際医学界では米国人の講演が，スライドのわかりやすさ，声量，話術のうまさなど，あらゆる点で抜群である。同じ英語圏でも，英国やオーストラリアの学者より遥かにうまい。これは米国ではpublic speechが必須科目であり，大学の一般教養課程で論文構成が徹底的に教育されているからである。愚息がシンシナティ大学音楽部に留学したが，英語教師による論文構成の教育は相当に厳しく，米人学生の50%が毎年落第させられていたそうである。このような厳しい教育は日本ではなされていない。

私は中学1年の時に弁論部に所属していたために，先輩から徹底的に声量の特訓を受けた。中学2年よりESS(English Speaking Society)に所属し，大学を卒業するまで毎年英語のスピーチ・コンテストに出場した。しかし日本人の英語教師に原稿の英語は添削してもらったが，paragraphingや論文構成など一切教わったことがなかった。ニューヨーク州立大学アップステイト医学部に留学して，生理学大学院修了時に学位論文を米国生理学会で発表したときに，Preston主任教授から半年間にわたって，論文構成，speech mannerなどの特訓を初めて受けて，大変勉強になった。

読者が読みたくなるように表題の付け方，読者を惹きつける序文の書き方など，すでに詳説したので文献を参照されたい[2)]。

5. 終わりに

米国には，国語(英語)の教授にはProfessor of English LiteratureとProfessor of English Languageの異なった専門分野の教員がおり，大学の教養課程の英語は後者が教え，

前者はあくまでも英文学の専攻の学生の教育に専念していると理解している。残念ながら日本のほとんどの大学に英文学科はあっても英語学科はない。私が千葉大学学生の頃は，教育学部に天野教授がおられ，この先生は自身で専門は英文学ではなく，英語学だと主張され，我々SES (Spoken English Society)（千葉大学ではESSではなくSESと天野教授が命名）の部員の英語を徹底的に教育された。

日本の英語教育の失敗をなくすには，英語を自由に使いこなせるbilingualを育成して，英文学ではなく英語学の教師とnativeのみに英語の教育をさせる大改革が必要と痛感している。

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2009年に文部科学省の「グルーバル30プログラム」に採択されて以来、筑波大学では「国際性の日常化」のコンセプトを構築し、様々な国際化戦略を推進している。そうした環境の中で、医学分野における英語教育には英語を母語とする3名の承継教員(EMP教員)が携わっており、学部・大学院学生を対象としたカリキュラム英語教育、教員・事務職員を対象とした非カリキュラム教育活動、さらにはキャンパスにおける国際交流等に幅広く活躍している。また、2010年には医学分野の教員や学生の国際交流を推進するため「医学英語コミュニケーションセンター」が設立されたが、ここではEMP教員が英語論文や海外における学会発表の際のスライドやポスターの校正・添削を行っている。さらに、大学院におけるサマースクールや海外の交流協定締結校にも積極的に出向き、学生による英語プレゼンテーション能力の開発や指導にも積極的に携わっている。今後の課題は、より多くの医学英語コースを必修科目として、また専門科目の一部としてカリキュラムに取り入れることで、筑波大学における医学英語教育の一層の充実を図ることである。

In 2009, the University of Tsukuba was selected by MEXT as one of the Global 30 Program universities. Since then, the university has been pushing forward with various internationalization strategies based on the concept of “daily internationalization.” In such an environment, the medical faculty’s 3 native-English EMP teachers are tasked with teaching a wide range of courses: undergraduate and graduate courses; extracurricular courses for students, faculty, and administrative staff; and courses offered as part of the faculty’s exchange programs with partner universities overseas. With the establishment in 2010 of the Medical English Communications Center, these duties have been extended to include editing and presentation practice services for faculty and students. Going forward, points to be improved include increasing the number of compulsory English credits students must earn and rearranging the timing of some English courses so that they coincide more closely with related medical classes.

1. Introduction

The University of Tsukuba has always had a strong international character. This character derives considerably from the large community of non-Japanese who live and work in Tsukuba as academics at the university or at the city’s numerous research institutions. Since being selected in 2009 by the Japanese Ministry of Education, Culture, Sports, Science, and Technology as one of the 13 universities of the “Global 30 (G30) Project for Establishing Core Universities for Internationalization,” the university’s international character has become further ingrained.

The G30 project’s aim is to promote internationalization by recruiting overseas students and faculty to the nation’s universities and establishing research partnerships and student exchange programs with overseas universities.[1] At the University of Tsukuba Faculty of Medicine, partnerships thus far established include those with universities in Brazil, France, Germany, Indonesia, Taiwan, the United Kingdom, the United States, and Vietnam. The number of G30 students currently studying at the faculty is twenty-eight. They are studying for degrees at both the undergraduate and the graduate levels (Degree in Medical Sciences, 5 students; Master’s Degree in Medical Science, 8 students; International Research Course [PhD], 15 students).

G30 program courses are all taught and administered in English. A special feature of

the University of Tsukuba Faculty of Medicine's G30 program is that Japanese students are also encouraged to take the courses offered in English, thus contributing to the "day-to-day internationalization" of the faculty's academic environment.[2]

It is within such an environment, then, that the 3 full-time English-for-Medical-Purposes (EMP) teachers (all native English speakers) are tasked with preparing both Japanese and non-Japanese students to participate at the international level as medical professionals and researchers. In addition to these duties, the EMP teachers offer extracurricular English activities to teaching and administrative staff to help develop their English skills, and to Japanese and non-Japanese students to promote friendly exchanges between them.

In the rest of this paper, we will first briefly introduce the office that forms the base for a significant portion of the English-language support provided by the EMP teachers. We will then outline the components and contents of the EMP courses and activities offered.

2. Medical English Communications Center (MECC)

This center was launched in April 2010, as a subdivision of the International Office of the Institute of Medical Science. The purpose of the center is to support medical faculty staff and students in their English-language professional activities in the international arena. To this end, the 3 EMP teachers provide editing and presentation practice services.

The editing services consist of manuscript, slide, and poster editing. Of these, the manuscript editing is the busiest, with an average of 65 editing requests per year. The EMP teachers work with authors through every step of the rewriting process, from preparation of the manuscript for the first submission to the prepublication final revision. In addition to editing authors' writing, the EMP teachers work with the authors to explain the edits and to provide advice on how they can improve their writing.

The presentations practice service consists of assistance with practice of slide or poster presentations to be given at international conferences. This is also a popular service and has many repeat users.

With the launch in 2013 of our new MECC website (http://www.md.tsukuba.ac.jp/MECC/), we hope to further extend our educational reach through the "Self-Study" page, which offers worksheets on various aspects of scientific writing and communication for use by all visitors to the website.

3. Medical degree program (Table 1)

3.1. Compulsory English courses

Medical School students have compulsory English classes for their first 2 years of study. The yearly intake of approximately 230 students, from the School of Medicine, School of Nursing, and School of Medical Sciences, is divided into 5 classes: A1, A2, B1, B2, and C, with about 45 students per class. A placement test, administered in early April, is used to divide the students

Table 1. Undergraduate English Courses at the University of Tsukuba Medical Faculty

Courses	Students	Elective/Compulsory	Duration
General English[a]	1st	Compulsory	Yearlong
Principles of English[a]	1st	Compulsory	Yearlong
Cross-Cultural Awareness of English[a]	1st	Compulsory	Yearlong
Seminar on Scientific English	2nd	Compulsory	Yearlong
English for Specialized Subjects[b]	2nd–6th	Elective	Various
English History-Taking Workshop	4th	Elective	10 sessions over 5 weeks
Workshop for Medical Science Students	1st–2nd	Elective	10 sessions over 1 year

[a]Organized by the university's Foreign Language Center.

[b]Ten different courses are offered.

into the 5 levels according to their English ability. These classes are organized by the university's Foreign Language Center, giving students access to the center's specialist language teachers and language learning facilities, such as the CALL labs, media library, and online learning resources.

First-year students have 3 English classes each week, which cover 3 basic programs of study: General English (総合英語), Principles of English (英語基礎), and Cross-Cultural Awareness and English (異文化と英語). This program of study is university-wide and designed for all first-year undergraduate students. In their second year, Medical School students take a compulsory course entitled "Seminar on Scientific English" (科学英語演習), which is a course designed to help students begin to engage in the more scientific/academic aspects of English. Within the framework of the general course aims it is left to the discretion of the instructor to decide the syllabi, materials, and so forth for each of these compulsory classes.

An EMP teacher (T.M.) from the Faculty of Medicine is also involved in teaching these first- and second-year classes, which allows for the delivery of some specific medical English education to the Medical School students alongside their general English education. These classes, consisting of 25 sessions, are held in 2 stages, which are divided by the spring and autumn semesters. Assessment is done at the end of each period of study, and the method of assessment is left to the discretion of the instructor.

3.2. Elective programs of study in EMP

From the second year, Medical School students can choose from a range of 10 elective EMP courses, given the general title of English for Specialized Subjects (専門語学－英語). Unlike the compulsory classes, these courses are organized by the Faculty of Medicine and are designed for those students wanting to further their medical English education.

The courses vary in length, class size, and scope and are taught by Japanese and non-Japanese teachers from the Faculty of Medicine, who cover various aspects of EMP, reflecting their respective fields of expertise. One class, for example, focuses on the subject of human care, another involves reading articles from The *New England Journal of Medicine*, another helps students to master medical terminology by studying Greek and Latin word parts, another teaches communication between doctors and patients, and another prepares students for the United States Medical Licensing Examination.

3.3. English History-Taking Workshop (英語で医療面接)

This workshop forms part of the Preclinical Clerkships program that students take in the spring semester of their fourth year. The focus of this program is on preparing the students for their hospital clerkships, which begin in the fall semester. Clinical communication skills training is an important component of the program, and the English History-Taking Workshop falls under its umbrella, albeit as an elective. Students can sign up for as many or as few of the 10 workshop sessions as they like; some sign up for only one, some for all ten.

The main activity of the workshop is history-taking role-plays in English, with students taking turns playing the part of the physician. The patient is played by a professional simulated patient (SP) from the Ibaraki SP Association. Workshop participants also engage in round-table discussion after each role-play, including self-reflection by the role-playing student and feedback from the observer-students, SP, and EMP teacher(s) (T.M. and F.M.).

This is the only EMP course to coincide closely in time, content, and objectives with courses in the Medical School curriculum and, as such, is immediately meaningful and motivating for students.

3.4. Workshop for Medical Science Students (医科学グループワーク演習)

New for 2014, this 10-session workshop, held over the year, has 3 instructors: a medical science teacher and 2 EMP teachers (T.M. and B.K.P.). Five doctoral student teaching assistants (TAs) also provide peer instruction. The workshop, delivered entirely in English, aims to give students confidence to engage with others in English about their subject and to equip them with the skills to do so. It involves classroom work, with special seminars in current topics of medical science, group discussions and presentations, and TOEFL training. Some of the sessions are held as part of international conferences, field trips, and social events where students can engage with international researchers in the medical sciences.

4. Master's degree program (Table 2)

4.1. English for Medical Science and Technology (EMST)

Students of the Master's Programs in Medical Sciences, Public Health, and Nursing Sciences, known collectively as "the Frontier Program," take this yearlong compulsory English class. The approximately 60 students are divided into 3 groups, each under the supervision of one of the EMP teachers. Approximately one quarter of the students are from overseas, so the class has a very international dynamic.

The students learn the essential skills of scientific communication in English, with particular emphasis on scientific presentation and oral communication. This innovative class incorporates multimedia, online, and social media projects, thus equipping students to communicate science in the digital age and on an international stage.

4.2. Lunchtime English Chat

This is an informal English conversation class held once a week during lunch break. The class aims to develop students' fluency and to build their confidence to speak English in social situations and thus focuses on general English conversation, such as engaging in small talk and sharing ideas and personal opinions.

5. Doctoral degree program (Table 2)

5.1. About the program

The following degrees are offered: Doctoral Program in Biomedical Science, Doctoral Program in Clinical Science, and Doctoral Program in Nursing Sciences. All students are encouraged to take the G30 component courses taught in English. Students must publish at least 1 first-author original research article in an English-language peer-reviewed journal, achieve a TOEIC score of 750 before graduation, and defend their dissertation in English.

5.2. PhD Research Presentation and Discussion

This is a very international course: nearly all students (9 out of 11 in 2014) are from overseas and come from countries as diverse as Bolivia, Uganda, and Uzbekistan. Occasionally, they include a native English speaker. Students are in the second year of their studies and thus at a point in their careers where they have to present their research at international conferences. Therefore, the challenge is to integrate highly specialized science with highly specialized English. Our pedagogic solution is team-teaching by a Japanese medical science teacher and an EMP teacher (B.K.P.), who has long experience teaching scientific presentation skills, including to senior researchers.

Table 2. Graduate English Courses at the University of Tsukuba Medical Faculty

Courses	Students	Elective/Compulsory	Duration
English for Medical Science and Technology	Master's students in Medical Sciences	Compulsory	Yearlong
PhD Research Presentation and Discussion	Doctoral students in Medical Sciences	Elective	Yearlong
Technical English in Medical Sciences	Doctoral students in Medical Sciences	Elective	Yearlong

The first half of the 12-week course starts with a lecture by the EMP teacher on presenting, questioning, and chairing. Then, each week an invited faculty member presents on his or her research, and students chair and ask questions. The EMP teacher corrects important errors in the students' English and answers their many questions about the language.

The second half of the course starts with one lesson in which each student presents 2 slides and receives feedback on his or her presentation techniques and English. Thereafter, 3 students present per week, and feedback is given. This methodology of partnering a medical science teacher and an EMP teacher has proved to be very effective.

5.3. Technical English in Medical Sciences (医学専門英語)

This yearlong course is taught by an EMP teacher (F.M.). Students learn the principles of effective scientific writing, from the micro level of words, sentences, and paragraphs to the macro level of the IMRAD sections. This year, more than two-thirds of the students (11 of 15) are non-Japanese.

6. Faculty Development of English (FDE) (Table 3)

6.1. About FDE

To compete globally for students, a university needs faculty who can teach well in English. If they and/or their students are nonnative speakers of English, it is necessary not only to support the English ability of the faculty, but also to research and practice strategies for English as a lingua franca in academic settings (ELFA). Therefore, the EMP teachers (T.M. and B.K.P.) read the literature, survey faculty and students about their experiences, and devise pedagogic strategies and practice tailored to their needs. This is part of the university's campus-wide Faculty Development.

6.2. Monthly seminar

An EMP professor (B.K.P.) holds a monthly evening seminar for faculty members in which he leads discussion on relevant aspects of English and teaching. As a practice opportunity, in each seminar one of the participants also does a short presentation-style lecture, which is videoed. The video is given to that presenter to study and to report on in the next seminar. The aim of the video component and the FDE in general is to encourage reflection on teaching in English and find practical answers to questions that arise.

6.3. Weekly 30-minute lesson

An EMP teacher (B.K.P.) provides a weekly 30-minute lunchtime lesson, mainly for faculty, initiating discussion on a variety of topics involving medical English and addressing important errors frequently made by this particular type of student. Busy faculty members find it convenient to "just drop in" for 30 minutes whenever they are able. Also, the brevity and variation in participants pushes up the energy level noticeably, creating a rewarding challenge for the instructor.

7. Overseas exchange programs (Table 4)

7.1. About the program

As part of the University of Tsukuba's efforts to engage our students in the global community, the Medical Faculty organizes a number of collaborative programs with our partner universities overseas. Below is a list of those programs in which the EMP teachers are also involved in teaching activities.

Table 3. Faculty Development of English and extracurricular classes at the University of Tsukuba Medical Faculty

Program	Subject	Students	Duration
Monthly Seminar	English and teaching, presentation	Medical Faculty	Yearlong
Weekly 30-minute lesson	Medical English	Medical Faculty	Yearlong
Lunchtime English Chat	General English conversation	Master's students in Medical Sciences	Yearlong

7.2. Summer Research Program in Tsukuba

Since 2010, the Faculty of Medicine has hosted a 2-week summer school, now called the Summer Research Program in Tsukuba, for students from partner universities overseas. In 2014, 44 students came from France, Hungary, Indonesia, Taiwan, the UK, and Vietnam. They study in laboratories of their choice to conduct research in their field of interest. They also enjoy field trips and parties with the faculty's students and professors.

The summer school climaxes in a presentation competition that simulates a conference. It is held in a state-of-the-art conference hall in front of fellow students, TAs, and teachers. Every participant gives an 8-minute oral presentation on his or her lab work followed by discussion. For this event, the participants are lectured and individually coached and rehearsed by an EMP teacher (T.M. or B.K.P.).

7.3. Molecular biology course at the Institute of Tropical Biology in Ho Chi Minh City

Since 2008, the Faculty of Medicine has sent a team annually to teach a 5-day intensive molecular biology course at the Institute of Tropical Biology in Ho Chi Minh City. The University of Tsukuba teachers give lectures, and the PhD and master's students provide practical instruction in advanced laboratory techniques.

The course climaxes in a presentation competition that simulates a conference. From the start, the EMP teacher (B.K.P.) talks individually with the Vietnamese students, lectures on presenting, and coaches them in small groups. The Japanese students and faculty also help them prepare their presentations and the EMP teacher rehearses each one in the morning before the competition.

Prizes are awarded for best presenters, questioners, and answerers. Having English and presenting instruction integrated into this medical science course makes it more appealing for applicants, and the EMP teacher can support the students and professors who teach it.

7.4. Advanced molecular biology course at the University of Science, Ho Chi Minh City

In 2014, we started the 3-day intensive Advanced Molecular Biology Course at the University of Science in Ho Chi Minh City. Before the course, the Vietnamese students received a number of recent articles with comprehension questions from 3 medical science teachers. They sent back reports on the articles, giving the medical science teachers indications of their scientific proficiency and the 2 EMP teachers (T.M. and B.K.P.) indications of their English proficiency.

In Vietnam, the 3 medical science teachers each gave a lecture and led a group of students for 2 days through journal club discussion and chalk-talk sessions. The 2 EMP teachers assisted throughout and also gave an interactive lecture on presenting. All the teachers helped the students to prepare for small group presentations in a competition on the final day.

Table 4. Oversees Exchange Programs organized by the University of Tsukuba Medical Faculty

Program	Subjects	Duration
Summer Research Program, Tsukuba	Clinical medicine, medical science, public health, nursing science, biology	10 days
Molecular Biology Course, Institute of Tropical Biology, Ho Chi Minh City	Molecular biology, scientific presentation in English	5 days
Advanced Molecular Biology Course, University of Science, Ho Chi Minh City	Molecular biology, scientific presentation in English	3 days
Tsukuba Global Science Week, Tsukuba (conference)	Medical science, public health, nursing science, biological science, sports science, food science, information science, politics, economics, humanities, the arts	3 days

7.5. Tsukuba Global Science Week

Since 2011, the Faculty of Medicine has held a conference every autumn in a conference venue in Tsukuba. In 2014, 1400 participants attended. Leaders in their fields from the University of Tsukuba and partner universities give presentations. Mini conferences in a growing number of diverse fields are held all over the conference venue. Student oral and poster presentation sessions are also held, with awards given. Both types of student presentations are judged by a faculty team, including the EMP teachers.

8. Future directions

A major weakness of the undergraduate medical degree course is that the EMP courses are all elective. Going forward, we hope to amend this credit system so that students must obtain a certain number of compulsory credits selected from the EMP courses to graduate.

Another goal is to increase the meaningfulness of the EMP courses by aligning them more closely with the medical courses so that they are offered within the same time frame and cover the same type of material. If in the process we can also initiate some kind of cooperation between the medical and EMP teachers in conducting these courses collaboratively, the overall program of learning for medical students at the University of Tsukuba will be considerably enhanced.

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