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Mapping Communication and the Use of English within the Practice of Medicine

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The research has led to an improved understanding of the structure and wording of medical case reports and a greater insight into communication between medical staff and patients in an endoscopy department. Findings have been used in developing pedagogic materials for students,

The research involved a combination of interview based research, discourse analysis, and corpus analysis combined with software design and development. Background interviews with medical staff were conducted at a hospital. Their most regular use of English was through journals. The research team analyzed 108 articles supplied by the university medical school. To further investigate communication in English regarding the practice of medicine, the team chose a particular specialism, endoscopy, to document the stages of colonoscopy and polypectomy and investigate the documents involved. The team also built recording equipment and trialed it at a local hospital. The team then worked on adapting pedagogic software for use by students and trialed it with two groups of students.

English for Medical Purposes

Corpus Analysis Discourse Analysis Documentary Analysis Case Reports Endoscopy Pedagogic Materials

１．研究開始当初の背景 (Background of the study; Background at the beginning of the study)

This research was built on previous medical English projects undertaken by members of the research team to create a pedagogic medical English word list for undergraduates, and a set of core teaching materials based on interviews and corpus analysis of key medical texts in English. Two of the team's members are actively involved in teaching medical English to undergraduates. The research team wished to build on the existing research to explore communication in English within the medical profession, examining how medical doctors communicate with patients as well as with each other.

２．研究の目的 (Purpose of the study)

The original purpose of the study reported here was to map the ways in which members of the medical profession communicate with each other, identify key situations and processes, and explore the spoken and written English discourse associated with them. This mapping would be used to adapt and design materials for medical students that aid them in developing the professional English they need and to further develop a curriculum for undergraduates.

３．研究の方法 (Methods of the research)

The original plan was to explore communication in English in Japan in the first year of research, and then to visit hospitals and talk to doctors in English-speaking countries in the second year, followed by the development of pedagogic materials in the third year. This would be done through interview research and the collection of example documents. However, the Covid pandemic had a major impact on travel and the team was not able to conduct research abroad. In addition, the research team was affected by the death of one of its members, responsible for ITC in the project, who was replaced by a new member.

The revised plan involved a combination of interview-based research, discourse analysis, and corpus analysis combined with software design and development.

Year 1: Interview-based research at a Japanese hospital
Year 2: Covid pandemic. No research*
Year 3: Corpus analysis of case reports via the university medical school
Year 4: Materials development, interview-based research, and software/ equipment design
Year 5: Testing of software to aid learning of medical terms

* Classroom-based medical English and general English materials were converted to online materials and tasks during this period.

４．研究成果 (Research results)

Given the challenges during the years in which the research took place, the team had to adapt the plan. After conducting interviews in the first year at a local hospital, in which practicing doctors discussed their use of English, the team decided to focus on communication via case reports, which are the simplest forms of written journal articles. This was done through corpus analysis of over 100 case reports supplied by the university's medical school at the research team's request. In addition, the team identified the specialism of endoscopy for further research and worked with an endoscopy department to explore interaction between patients and medical staff. The research led to the refining of existing materials and a word list from a previous project.

In the first year, background interviews with medical staff at a hospital near the university's campus indicated that staff occasionally needed English to interact with patients from outside Japan, particularly because the hospital was near one of the university's campuses. However, the more regular use of English was through journals. Further communication with medical staff at the university campus indicated that the shortest kind of research article was the case report and, given that the research was oriented towards the creation of pedagogic materials for students in their early years of medical education, this kind of article was selected for investigation. The research team contacted the university medical school to request aid with the collection of articles. The medical school responded by gathering 108 case reports from across the medical specialisms.

Three of the articles were chosen for discourse analysis, and the full corpus of reports was used for analysis using the *AntConc* software. The structure of the reports was simple, with most reports having an abstract and a body of three main sections consisting of an introduction, case presentation, and a discussion containing a conclusion. Corpus analysis revealed key structuring phrases used in the reports (Table 1). In relation to pedagogic possibilities, the analysis revealed insights into case presentations, and although the writing of a case report would be beyond the possibility of a third-year medical student, the team considered how a case presentation could be written by students using simulated patient data. Concerning curriculum, the team has worked on adding information about case reports to an upcoming book on medical English.

TABLE 1: Key Text-Structuring Phrases identified in Case Report Corpus

(in) the presence of	we herein report
(in) the absence of	we describe (a)
in this case	based on (the)
in the present case	due to (the)
in our case	the onset of
as well as	on the other hand
(in) the present study	on behalf of (the)
(had) a history of	is characterized by
(there was) no evidence of	on the basis of
(for) the treatment of	to our knowledge (this is)
the (differential) diagnosis of	to the best of our knowledge (this is)
the risk of	the first report (reported case) of
at the time of	the role of
here we report	we believe that
we report a case	with regard to

To further investigate communication in English in relation to the practice of medicine, the team chose a particular specialism, endoscopy, to document the stages of colonoscopy and polypectomy and investigate the documents involved. During this time, the team also built recording equipment and trialed it at a local hospital. Regarding endoscopy, two medical specialists explained the process involved. As a result, a brief summary of colonoscopy was written by the team and shared with the endoscopy specialists. This material was used to refine a pedagogic unit in the existing curriculum.

In the fifth year, the team worked on adapting pedagogic software for use by students. The refined materials were carefully reviewed to extract key medical terms from each unit of pedagogic materials and an updated medical English word list (MEWL) was constructed, consisting of approximately 1,700 words. Example sentences were generated using ChatGPT, which were then carefully reviewed and edited. The list was then added to vocabulary software that allows students to analyze stretches of discourse, identify terms that they wish to learn, and provides aid for learning through spaced repetition software that creates periodic reviews of the terms chosen (Figure 1). The software was trialed with two groups of students in the second half of the year. Results are currently being analyzed for publication, but preliminary findings indicate that students become much more active with the software when it is integrated into classes and regular guidance is provided.
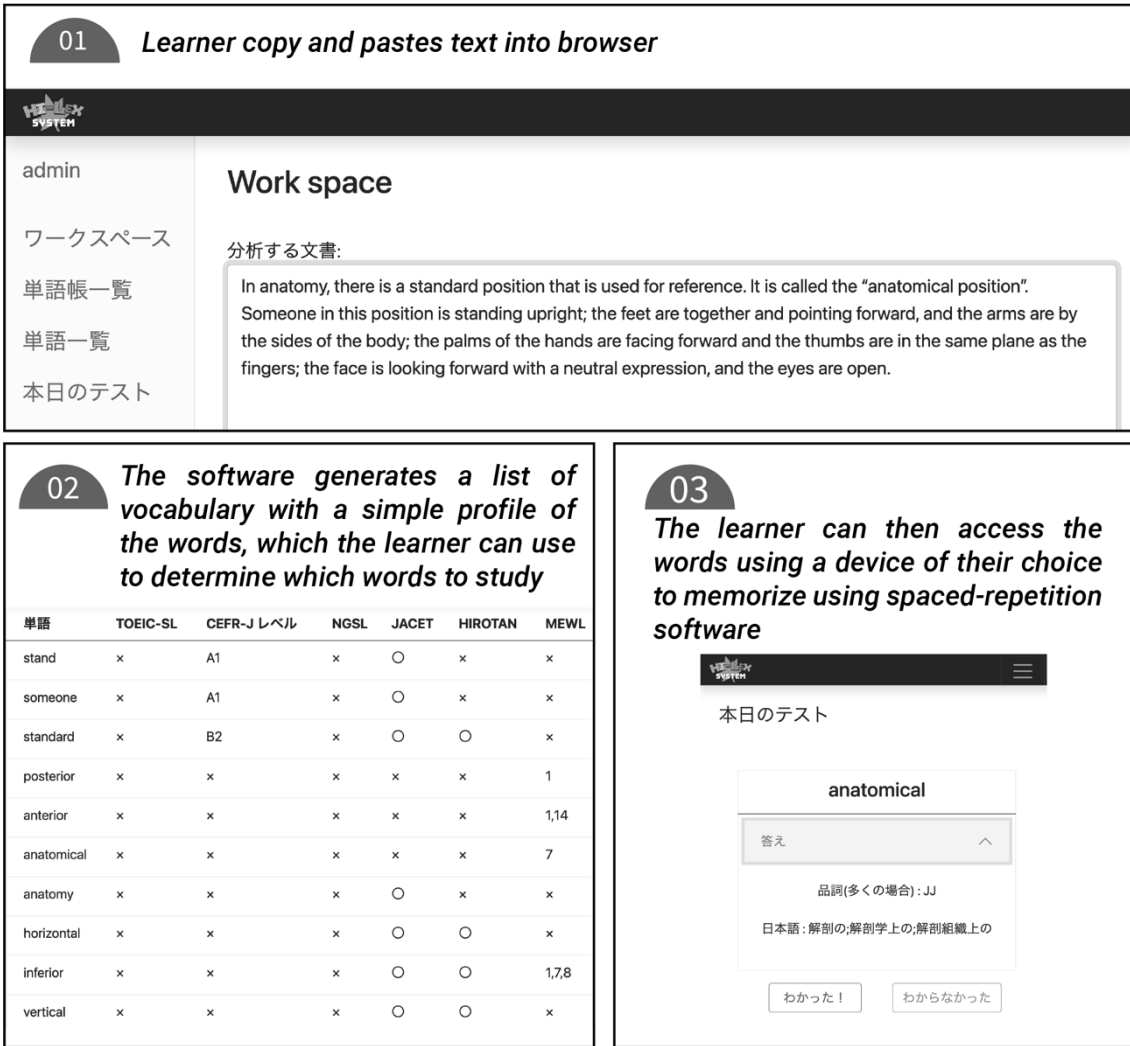
FIGURE 1: Steps in creating a personalized word list

During the course of the project, the team has been able to gain a much greater insight into the process of communication in medicine. The research has led to improved understanding of case reports in medicine and has aided in the refining of existing materials. The research team plans to continue research and development in medical English in the future, particularly in relation to hospitals and medical specialisms, by creating easily comprehensible texts in English that summarize diseases and the stages of treatment.

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