

# Development of an E-Learning Course to Enhance Doctor-Patient Communication Skills in English

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**Abstract** In Japan, medical students face challenges in utilizing English professionally due to limited exposure to English in an EFL environment. To address this issue, we developed an e-learning course to improve their doctor-patient communication skills. The course integrates 12 dialogue videos from the textbook, "English for Medical Purposes STEP 1," with five sequential tasks: worksheet preparation, video viewing with subtitles, video viewing without subtitles, role-play exercises, and comprehension-check quizzes. The evaluation showed that the students found the videos and quizzes effective, particularly for developing verbal communication skills, although the non-verbal aspects received less emphasis. This paper outlines the course development, presents the survey results, and outlines plans for future improvements and expansion.

**Keywords** E-learning, Doctor-patient communication, English, Medical students

## 1. Introduction

The increasing demand for English proficiency among medical professionals in Japan has become apparent due to the effects of globalization and advancements in medicine (Higa, 2023). English proficiency is essential for accessing up-to-date medical information, collaborating with international colleagues, and communicating effectively with patients. For example, international conferences, research collaborations, and interactions with English-speaking patients are becoming increasingly common in the medical field. However, many Japanese medical students face significant challenges in utilizing English professionally due to the lack of daily exposure and practice in an EFL environment. These challenges often lead to a lack of confidence in their communication skills, further inhibiting their ability to engage in interactions in English. Addressing this gap requires effective teaching strategies that not only enhance in-class learning but also promote learner autonomy and motivation for self-study.

At the School of Medicine of Shimane University, we have extensively used ICT tools like Moodle to create

various courses aimed at improving medical English education. These include a medical terminology course (Iwata et al., 2019), case presentations in English, and an Occupational English Test (OET) Medicine study course. These courses are designed to provide a comprehensive foundation in medical English, catering to different skill levels and professional needs. Among these, the "Doctor-Patient Communication Skills in English" course was specifically designed to enhance communication skills required for clinical settings, supplementing traditional classroom teaching. In addition to addressing verbal communication, this course also aims to introduce students to authentic clinical scenarios. By using dialogue-based video materials and interactive tasks, the course provides students with a simulated environment for practicing doctor-patient interactions in English. We hypothesized that this practical approach would help bridge the gap between theoretical knowledge and real-world application, making it a valuable resource for medical students.

## 2. Course design and development

### 2.1 Course objective

The "Doctor-Patient Communication Skills in English" course was developed in 2023 with the following two primary objectives:

- (1) To supplement *Basic Medical English 2* lessons for first-year medical students.
- (2) To provide learning tasks for them to improve their doctor-patient communication skills.

The course is based on the textbook *English for Medical Purposes Step 1* (published by MedicalView), which focuses on common symptoms such as anemia, headache, fractures, and abdominal pain. These topics are learned through learning tasks focusing on listening, vocabulary, reading, and speaking skills. By incorporating real-life medical scenarios, the course helps students develop practical skills for clinical conversations in English.

### 2.2 Video integration

A key feature of the course is the integration of 12 dialogue video clips from the textbook. These videos were shot and edited by the development team based on the textbook's scripts and show authentic doctor-patient interactions (Figure 1).



Figure 1. Shooting a doctor-patient communication

Each video clip focuses on a specific clinical scenario, demonstrating not only useful English expressions for doctor-patient communication but also interpersonal skills, such as posture, eye contact, tone of voice, and gestures, which are essential in medical practice with patients. The edited video clips were integrated into Moodle, a popular learning management system, providing a cohesive learning experience for medical students. Each video clip includes subtitles, allowing students to focus first on linguistic details before moving on to role-plays and comprehension-check tasks.

### 2.3 Structured Learning tasks

The course adopts a structured approach with the following five sequential learning tasks:

- (1) Worksheet Preparation: Students download a worksheet designed to guide their learning process and provide a framework for notetaking and comprehension (Figure 2).

Worksheet for Unit 06: Chest Pain

D: Good morning, Mr./Ms. XXX. I'm Dr. YYYY. (1)今日はどうされましたか?  
P: I've been having terrible pains in my chest, doctor.  
D: (2)いつ始まりましたか?  
P: About a week ago.  
D: And (3)これまで何回発作がありましたか?  
P: Oh, six or seven, I'd say.  
D: I see. Can you remember what you were doing when the first one came on?  
P: Yes, I was just walking to work.  
D: So, do the attacks always come on when you're doing some kind of physical activity, or is there anything else that brings them on?  
P: Well, exercise—any kind—definitely brings them on. But I've also had attacks when I've been eating or emptying my bowels.  
D: I see. (4)痛みがどこのか、正確に教えていただけませんか、when it comes on?  
P: Well, here? the whole left side of my chest is painful.  
D: (5)痛みについて説明してもらえませんか?  
P: Hmm, I suppose I'd say it's a dull kind of pain.  
D: Right, and (6)痛みが他の場所に広がりますか?  
P: Yes, it spreads to my jaw, and I sometimes feel it in my left shoulder and arm.  
D: OK. (7)その痛みは10段階尺度でどれくらいですか?  
P: Well, I guess I'd have to give it 7 or 8.  
D: Pretty bad, then. (8)何か他の症状に気づきましたか?  
P: Yes, the pain sometimes makes me feel sick and a bit dizzy.  
D: (9)発作がどれくらい続きますか?  
P: Not long. Just a few minutes.  
D: (10)これまでこのような問題がありましたか?  
P: No, doctor. This is the first time I've ever had chest pain like this.

Figure 2. A sample worksheet

- (2) Video Viewing with Subtitles: Students watch the videos with subtitles to focus on pronunciation and comprehension of key phrases (Figure 3).



Figure 3. Watching a video on Moodle

- (3) Video Viewing without Subtitles: Students re-watch the videos without subtitles to enhance their understanding of doctor-patient interactions without subtitles and improve their listening skills.
- (4) Role-Play Exercises: Students practice playing the role of the doctor in English, using the role-play video on Moodle. (Figure 4)



Figure 4. A role-play video on Moodle

(5) Quizzes: Students complete quizzes, including fill-in-the-blank and multiple-choice questions, designed to align with the OET Medicine test format. These tasks are expected to assess their comprehension and reinforce their learning (Figure 5).

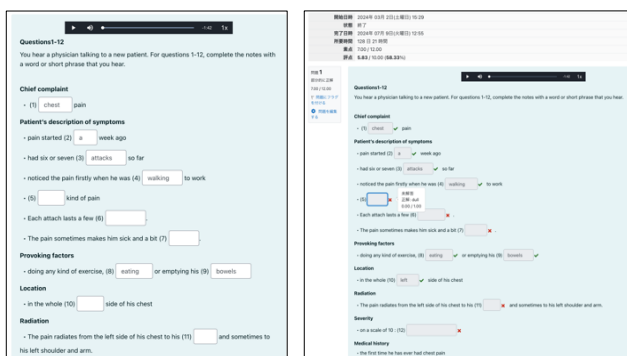


Figure 5. A Quiz and its assessment feedback on Moodle

### 3. Evaluation and Results

#### 3.1. Survey Design

To evaluate the effectiveness of the course, a survey was conducted among first-year medical students who took this course. The survey, administered via Moodle, included questions about the perceived benefits of the videos and quizzes, as well as specific aspects of verbal and non-verbal communication skills. Students were encouraged to provide detailed feedback, highlighting areas they found most useful and those requiring improvement.

- Data: n=100 (1st-year medical students, 2023)
- RR=98.0% (100/102)
- Data collection method: Moodle questionnaire module
- Date of data collection: February 3, 2024

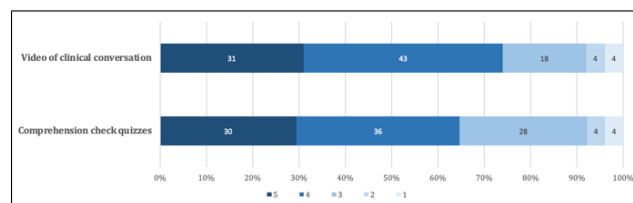
#### 3.2. Results

The survey results highlighted the following:

#### (1) Effectiveness of Videos and Quizzes:

Figure 6 shows the result of the question, “To what extent were the videos and quizzes helpful?” on a Likert scale of 1 to 5, with 1 not useful at all and 5 very useful. The results show that most students (74%, 74/100) found the videos beneficial, while 66% found the quizzes useful.

Figure 6. The usefulness of videos and quizzes



#### (2) Challenges in Non-Verbal Communication:

Figure 7 illustrates the results of the question, “What kind of effects do you think watching the video had?”

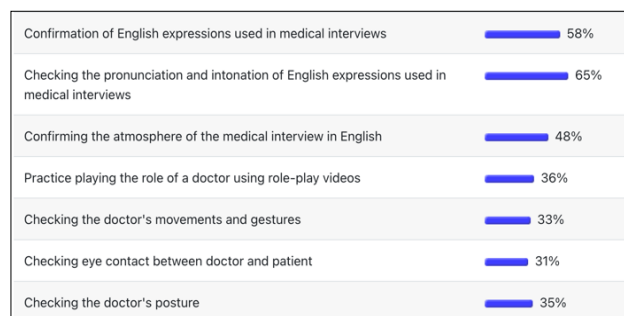


Figure 7. The effects of videos

While the videos were considered useful for learning English expressions and pronunciation for doctor-patient communication in English, non-verbal communication skills, such as gestures, eye contact, and posture were not as highly valued, with about one-third (31-35%) of the students finding these aspects effective.

#### (3) Student Motivation and Engagement:

The results of the question asking students if they were motivated by the variety of learning tasks in the course reveal that most students (89%, 89/100) reported increased motivation, suggesting the course's effect in fostering learner autonomy. In the open-ended comments regarding course usage, many positive remarks were received, such as "I enjoyed learning through this course" and "Learning through this Moodle course increased my motivation."

#### 4. Discussion

The survey findings highlight the importance of incorporating realistic and engaging content into medical English courses. The videos and quizzes used in the Moodle course effectively addressed verbal communication skills but revealed a gap in non-verbal communication skill training. Non-verbal cues, such as body language and facial expressions, play a crucial role in medical practice, particularly for building rapport with patients. To address this, future modifications of the course will include additional content focusing on these aspects.

Another area for improvement is the incorporation of culturally diverse scenarios. As Dogra (2018) pointed out, it is essential to prepare students for interactions with patients from various cultural backgrounds as healthcare becomes increasingly globalized. By expanding the range of scenarios and dialogues, the course can better equip students for real-world clinical settings.

#### 5. Future Directions

To enhance the course further, we plan to:

(1) Develop new video content:

We are designing scenarios for videos that emphasize non-verbal communication skills and cultural diversity. As part of this effort, we have begun investigating doctor-patient communication training at Lund University Faculty of Medicine in Sweden. Sweden is a highly diverse society with a 24.6% foreign-born population, and its healthcare system is designed to accommodate this diversity (Eurostat, 2024). Medical interview scenarios between doctors and foreign patients, along with best practices in medical interview instruction, will serve as key references for our content development.

(2) Introduce digital badges:

We will introduce digital badges as a motivational tool to recognize and reward students' achievements throughout the course. Digital badges are virtual credentials that signify accomplishments, skills, or competencies in a specific area. They are typically issued electronically and can be shared on professional platforms or digital portfolios. As Iwata et al. (2019) suggest, these badges will serve as milestones, marking the successful completion of specific modules or tasks, such as mastering a clinical scenario or completing comprehension-check quizzes. Badges will not only provide visible validation but also encourage a sense of accomplishment and progression. Additionally, these badges can be displayed in students' digital portfolios or resumes, highlighting their proficiency

in medical English to future employers or academic institutions. By incorporating this gamification element, we aim to boost student engagement and foster a more dynamic learning experience (Figure 8).



Figure 8. A digital badge shown on Moodle course

(3) Apply AI-powered medical interview simulations:

We aim to explore the integration of AI-driven tools to provide students with interactive and adaptive medical interview simulations. AI systems can simulate diverse patient profiles while offering tailored responses based on students' input during practice sessions. These simulations will help students refine their communication strategies in real-time, gaining experience with varied patient scenarios, including complex or culturally sensitive cases. AI can also provide instant feedback on language accuracy, tone, and empathy, further enhancing the learning process.

(4) Investigate long-term impact:

We plan to conduct longitudinal studies to assess the long-term effects of the course on students' communication skills during clinical practice.

These initiatives aim to create a comprehensive learning experience covering both verbal and non-verbal aspects of doctor-patient communication.

#### 6. Conclusions

The "Doctor-Patient Communication Skills in English" course demonstrates the potential of e-learning to enhance medical students' communication skills in a structured and interactive manner. By integrating realistic video scenarios, structured tasks, and interactive quizzes, the course effectively helps Japanese medical students overcome challenges in an EFL environment. Moreover, the course provides a valuable resource for developing essential skills needed in clinical practice, including listening comprehension, verbal expression, and confidence in English communication.

While the course has shown significant benefits, its limitations also offer insights for further improvement. Addressing non-verbal communication skills and incorporating culturally diverse patient scenarios will

ensure the course meets the demands of globalized healthcare settings. Furthermore, the integration of digital badges and the development of new content tailored to evolving clinical scenarios and AI applications will enhance learner engagement and motivation.

In the long term, this course has the potential to serve as a model for medical English education in Japan, bridging the gap between theoretical learning and practical application. By promoting both linguistic and interpersonal skills, the course equips medical students with the necessary tools for success in diverse professional contexts. As we continue to refine and expand the course, we hope it will contribute to the development of globally competent healthcare professionals who can effectively navigate the challenges of multilingual and multicultural clinical environments.

## 7. Acknowledgments

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