

## ORIGINAL ARTICLE

## Autonomous learning course for advanced medical English

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**Abstract**

**Background:** Medical English is one of the most rapidly developing fields, and classroom learning may not be sufficient to keep up to date for actual practice. Therefore, students need to acquire the ability to autonomously adapt to ever-changing situations in order to communicate their work. This course aimed at developing autonomous learners.

**Methods:** An English for specific purposes approach was used to make students aware of the concepts of the language used for professional communication. Students were guided in **O**bserving the structures and forms used, **C**lassifying what they had observed, **H**ypothesizing about the features and finally **A**pplying what they had learned for their own communicative purposes. This **OCHA** process was used to have the students examine the target task for its **P**urpose, intended **A**udience, the **I**nformation it was meant to convey, and the **L**anguage features used to present it. These were the **PAIL** features of the target text. Students were also introduced to the use of corpus linguistics and machine translation tools. The last class was a mock international academic conference where the students experienced giving oral and poster presentations in English, with question and answer sessions.

**Results:** All students completed their papers and gave oral and poster presentations on the final day. The presentations were well received by the disciplinary professors who participated as the audience, contributing to a great boost in student confidence.

**Conclusion:** This half-year autonomous learning course for advanced medical English communication demonstrated that it is possible for students who are not highly proficient in English to learn how to read and write research papers in English and also give oral and poster research presentations in English.

*Key words:* autonomous learners, ESP, oral and poster presentations, research paper

**INTRODUCTION****English for Specific Purposes (ESP)**

English education in graduate schools is ESP education, which focuses on communication needs in specialized disciplinary fields. Many conventional ESP classes focus on technical terms and frequently used expressions and structures found in research papers, while some try to teach about disciplinary content. However, ESP classes usually have students from a variety of fields, making it difficult to select the terminology and expressions or content to be taught.

In this information explosion era, research fields are constantly being consolidated and eliminated, so when transmitting information, the rules concerning terminology, wording, and document style change accordingly. Thus, what students learn in graduate school may not be applicable in the real

world. Under these circumstances, ESP instructors need to train their students to become autonomous learners who can analyze and apply the communication rules used in their respective communities as they evolve.

The purpose of this report is to introduce our Advanced Medical English course offered in a master's program at a graduate school of rehabilitation. Here we used an ESP teaching method based on **OCHA** thinking and **PAIL** analysis. Our classes using this ESP method show students how to become autonomous learners who can effectively communicate information in their respective discipline communities.

**OCHA and PAIL**

**OCHA** is an acronym that stands for "observe," "classify," "hypothesize" and "apply" (Noguchi,

2003). It is a way of ESP thinking to foster autonomous learning skills. In order to understand the characteristics of the language used in a particular genre of communication within a particular discourse community, we start by observing texts in a linguistic corpus (a large and structured set of texts) of the same genre used by the target discourse community. In the class, students themselves “**Ob**serve” the texts carefully, “**C**lassify” what they find, and then “**H**ypothesize” about the use of the language based on that information. Their final goal is to “**A**pply” these findings to their papers and academic presentations. Another important acronym that autonomous learners have to keep in mind is **PAIL**. In actual communication, one must first analyze for what “**P**urpose” and to what “**A**udience” the message is being delivered. In order to convey messages efficiently, the “**I**nformation” and “**L**anguage” must suit the purpose of the communication and its audience (Noguchi, 1997).

Autonomous learners are not those who wait for information or instructions from instructors, but they themselves recognize the skills and information necessary for their communication. In this program, our target genres were the research paper for journal publication, an oral presentation using PowerPoint slides, and a poster presentation. The aim of our program was to develop autonomous learners who have the skills to become active members of their professional communities.

## **PARTICIPANTS AND METHODS**

### **Participants**

The course reported here was offered over 15 sessions from April to July 2022 under the course title “Advanced Medical English.” The students who took the course were four male students in their first year of a master’s program in a graduate school of rehabilitation. While attending graduate school, three of them work at a hospital as physical therapists and one as a speech therapist. Three ESP instructors taught the course using a hybrid online course style combining online and in-class teaching. At the beginning of the first class, students were asked to voluntarily submit a consent form permitting us to publish a report on the classes.

### **Course content**

Since the ultimate goal of the course was to train students to become autonomous learners, the tasks provided in the classes were designed to

simulate activities in the real discourse community to which the students will belong in the future. Therefore, the instructors did not provide the language materials used in the class, but the students themselves were asked to collect them. The first half of the course focused on skills of academic paper writing and the second half on academic presentations. Described below are examples of in-class and out-of-class activities, using **OCHA** thinking and **PAIL** analysis.

## **Methods**

### **In-class and out-of-class activities**

For the course, the students were asked to write a research paper and give an oral presentation as part of their practical learning. As this was the first semester of graduate school, those who were not yet working on their own research or had not yet made progress in their research could use published Japanese-language papers for practice.

Based on this experience, the students were expected to be able to proceed with the preparation of full-fledged papers and oral presentations at international conferences on completion of their research. Familiarity with what to prepare, what to pay attention to, and what tools they could use are the first steps toward becoming autonomous learners.

### **Stage 1 (Day 1-3): Acquisition of basic knowledge**

First, terms such as ESP, OCHA, PAIL, discourse community, and corpus, were introduced, emphasizing that this was not a typical English class in which rote learning would be the goal.

The course also included explanations of the fundamentals of pronunciation and prosody, such as syllable stress, rhythm, weak forms of function words, sound linking, and intonation. Since oral and poster presentations were scheduled on the last day, the students were provided with knowledge and practice materials for self-study from the very beginning.

### **Stage 2 (Day 4-8): Writing practice for each paper section**

First, students were asked to decide on a tentative title for their own paper, choose an appropriate journal to submit the paper to, and create “my corpus” from 10 papers related to the content of the paper they were going to write.

Next, they were instructed on how to read the submission rules of the target journal. Some of the sub-

mission rules are difficult to understand for students who are not very proficient at English. Therefore, the students were taught how to quickly find the necessary information through skimming and scanning exercises. This made the students realize that professional texts are not to be read word for word from start to end.

Each class consisted of theory and practice, and students always performed a portion of the practice task during class. Completion of the tasks was given as an assignment. For example, students made a list of titles from their corpus, using the OCHA and PAIL processes in order to plan the title of their own paper. Similarly, they repeated the processes when writing their own abstract and introduction sections.

Once the students had progressed to the introduction section, they understood the skills needed to move on. Therefore, the instructor only explained what and how to write the sections of materials and methods, results, and conclusions in class. The remaining sections were to be completed as out-of-class activities.

### **Stage 3 (Day 9-15): Preparation of oral presentations and completion of portfolio**

In Stage 3, writing had become an autonomous effort, and students completed the remaining sections of the paper as assignments and added them to their portfolios, which will be described later.

#### **Pronunciation training**

The students began preparing for their presentations. They had already begun recitation practice in the third class.

Each student was asked to

1. select news material (about 1 minute long, up to 150 words) of interest to him;
2. submit the material with prosody marking of the first two sentences of the selected news item;
3. submit a recorded oral reading of the two sentences, referring to the instructors' revised prosody marking;
4. understand the instructors' comments on the oral reading and continue practicing;
5. complete and submit the prosody marking for the remainder of the news item; and
6. practice reading aloud using the corrected prosody marking as a guide, and submit the recording.

As there were many misread words, misplaced stresses, and intonation errors, model audio recordings were created and distributed for each news item

by the instructors. The students were asked to practice with them to prepare for the actual recitation in class.

On the recitation day, the students had been expected to recite the news, but as this seemed very difficult, they could refer to their notes but were told to look at the audience as much as possible. This experience gave the students confidence that with sufficient practice, they would be able to achieve "intelligible" pronunciation.

#### **Preparation of PowerPoint slides**

In the ninth through twelfth lessons, students were instructed to prepare their presentations using PowerPoint slides. Again, PAIL was clarified, and instruction was provided on how to create effective PowerPoint slides, how to prepare manuscripts that are as easy to understand and pronounce as possible. In creating the slides, the instructors emphasized the appropriate font size, number of characters, number of lines, how to use visual information and animation, as well as trying to avoid the use of complete sentences and using parallel structures for lists.

#### **Poster preparation**

In the 13th class, an explanation of poster presentations was given: the differences between oral and poster presentations, the difference in audience, and the position and content of information in the poster. Advice was given, as necessary, on student work outside of class.

#### **Presentation day**

On the final day, the president of the university (Masatoshi Takeda), as well as five other disciplinary professors participated in the mock international conference as the audience.

- Oral presentations: <https://youtu.be/hlJapwJLX7U>
- Poster presentations: <https://youtu.be/FHJkqYOMqpo>

#### **Tools used for in-class and out-of-class activities**

This section introduces the tools used in class and for activities outside of class.

#### **Google Drive**

All instructors and students shared a folder entitled "Advanced Medical English" and uploaded the files necessary for preparation, in-class and out-of-class activities in a timely manner. Students also had the advantage of learning what they lacked by referring to the files of their classmates (Figure 1).

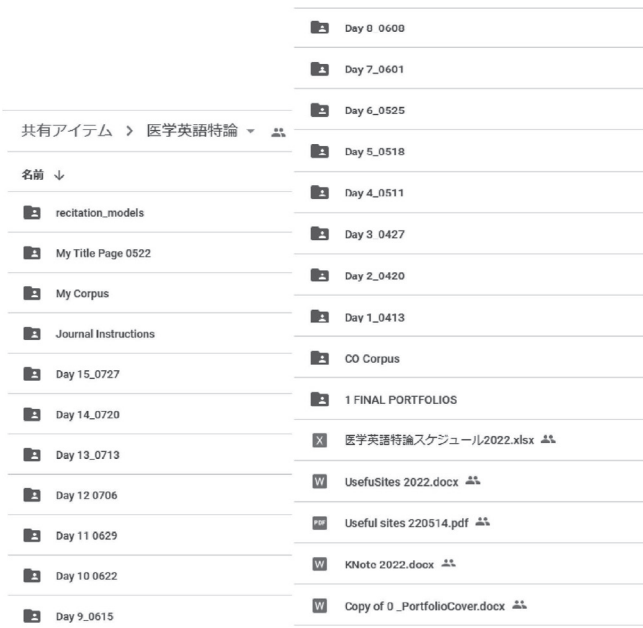


Figure 1. Items shared via Google Drive for the Advanced Medical English course

### Class Notes for Advanced Medical English

Before each class, the items on the schedule were uploaded. Students added necessary items to the notes during class. The purpose was to allow the students to concentrate on understanding the class and to help them prepare for and review the class, rather than spending time on note-taking.

### Template

In addition to the in-class explanations, sample files (corpus, title analysis, abstract analysis, cover letter samples, etc.) were uploaded to serve as references.

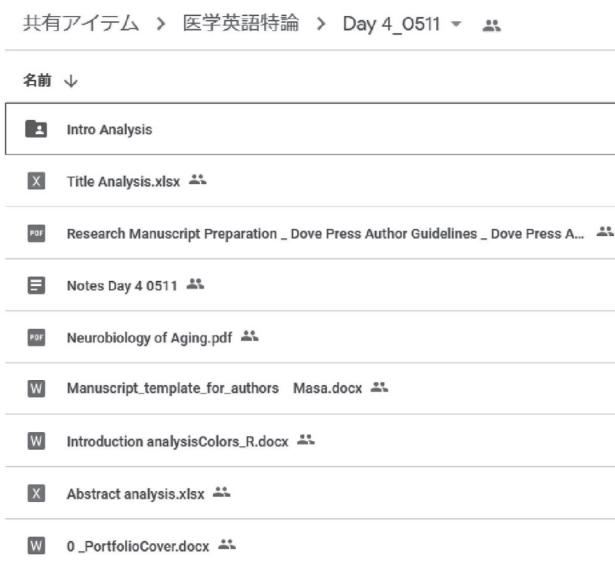


Figure 2. Items in the Google Drive Day 4 folder

### Submission folder

Students were required to submit each assignment to the indicated folder by the due date.

### “Please check” folder

Submitted assignments in the “Please check” folder would be checked and returned with comments. Questions about the assignment could be asked at any time (Figure 2).

### E-mail

After each class, a reminder e-mail was sent to the students to confirm what they needed to do before the next class. Personal e-mails were also sent as necessary, mainly for oral presentation instructions (prosody marking, oral reading, PowerPoint slides, and completion of posters) (Figure 3).

### Microsoft Teams

Recordings of each class were uploaded to create an environment in which students could review the parts that were difficult to understand.

### Useful free websites

- Breaking News English and VOA Learning English: News sites with audio. The students used these sites to practice reading aloud and to practice listening.

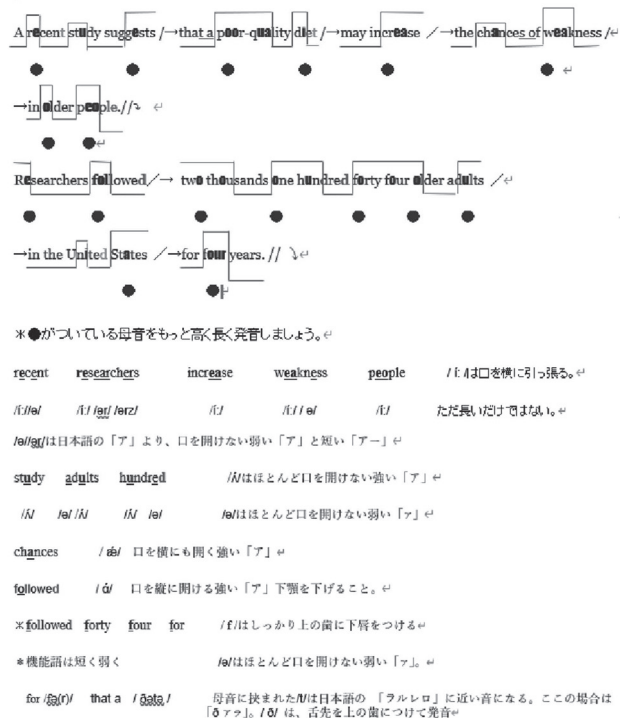


Figure 3. Example of feedback for prosody marking

- howjsay: Software to check the pronunciation of words. The site also covers many technical items.
- DeepL (translation software): Useful for technical English.
- AntConc: Software offering concordance lines of corpus material showing the usage of relevant vocabulary and expressions.
- natural reader: Text-to-speech software that can serve as a minimum model for reading aloud the words and sentences of a completed manuscript.
- Grammarly: A software program that checks for word and grammar adequacy and can check for basic errors such as third person singular and tenses.

### EVALUATION

The ultimate goal of this program was to help students learn to autonomously present their research in English. Through in-class and out-of-class activities, the course participants were able to develop such skills. Two types of evaluation were used: Evaluation Sheet and Portfolio.

#### Evaluation Sheet

In this evaluation method, students learn to assess their own skills objectively and to develop an attitude of overcoming their own weak points. Each sheet contained assessment items related to a target task and skills to be acquired by the students in relation to the task. The example shown in Figure 4 is for the task of “listening to a piece of English news and reciting it in front of the class.” Each student chose news on his favorite topic. On the recitation day, the students, as well as the instructors, evaluated each

presenter’s performance. The presenters were able to train themselves further based on everyone’s feedback. Evaluating other students’ presentations also contributed to the development of an autonomous learning mindset (Figure 4).

#### Portfolio

Students were told to keep digital copies of all the work they did so that they could refer to the processes and tools used in class when they had completed their research and were ready to actually write their own research paper or give an oral presentation.

Figure 5 shows the e-Portfolio items that the students were told to put into the folder. All types of tasks related to academic papers, oral presentations using PowerPoint slides, and poster presentations, are listed in the portfolio. The e-Portfolio was uploaded to the shared Google Drive folder. Unlike a conventional paper-based portfolio, the e-Portfolio allowed our students to receive feedback from us as soon as the items were uploaded. Based on our feedback, students were able to make further modifications. Although this feedback system may be difficult to apply to a class with a larger number of students, our e-Portfolio allowed the instructors and the students to interact in the process of completing each task. Thus, we were able to help students overcome their weak points on their own by providing advice tailored to each student’s needs. In addition, when the students had questions or concerns about the task, they could write them in the e-Portfolio to consult with any instructor (Figure 5).

The content of the e-portfolio could be revised as many times as needed until the final submission date.

Student's name	Website (VOA/BNE)	Topic/Title	Audibility (5-1)	Prosody (5-1)	Fluency (5-1)	Eye contact (5-1)	Total	What was good?	What could be improved?
1	VOA	Experts Aim to Understand Japan's Successes Against the Coronavirus	4	5	5	5	19	Good intonation : :	Check syllable stress of some words : :
2									
3									
4									

Figure 4. Evaluation sheet for the recitation task



Figure 6 is the screenshot of a portfolio folder submitted by one of our students. After the course, the students can review their portfolios to see how they worked on their tasks and how they resolved problems to improve their work. The portfolios can provide the students with useful clues to solve problems when they arise in the future (Figure 6).

The final assessment percentages for this course were as follows: 30% for the e-Portfolio, 20% for the recitation task, 20% for the PPT slides and scripts, and 30% for the final oral and poster presentation. Evaluation sheets for the recitation and presentation tasks were disclosed to the students immediately to help them maintain their motivation to learn.

## RESULTS

At first, the students found the aim at autonomous learning difficult to understand as it differed from the usual English teaching methods used in the Japanese education system. However, by the latter half of the course, the students had become accustomed to the OCHA and PAIL processes and took control of their own learning. All students completed their portfolios by the deadline, and the oral and poster presenta-

tions on the last day were well done. The actual presentation video by the four graduate students at the final day of the class is uploaded on YouTube at the URL obtained by QR code in Figure 7.

### Comments from the professors who observed the presentations:

- The students' English was intelligible.
- Although the students still had some Japanese accents, it did not interfere with their presentations, so they can be confident in themselves.
- It was very good to see the students presenting loudly and with dignity.
- The gap between the presentation and the Q&A session showed how much they had practiced.
- It is wonderful that the students were able to grow so much in such a short period of time.

### Student comments (multiple comments were received from each student)

- This course was very difficult. I was not able to keep up with the class because I was not good at English. But thanks to the support of the three instructors, I was able to do my best.
- I felt that I had grown up when the other professors

Section I
1. Cover letter to Editor
2. My Paper
Title page
Abstract
Introduction
Experimental section (one section)
Results (one section)
Acknowledgments
References
Figure, table, or scheme
3. Instructions to Authors for intended journal
4. Copy of a sample published paper
5. My corpus discovery
6. Abstract analysis (Excel)
7. Introduction analysis (Word)
Section II
8. Self-introduction
9. Recitation text
(Site name, URL, title, script with prosody markings)
10. Short research presentation PPT
11. Short research presentation script with prosody markings
12. Poster (pdf or PPT)
Section III
1. What I learned from this course

Figure 5. Items to be included in the e-Portfolio

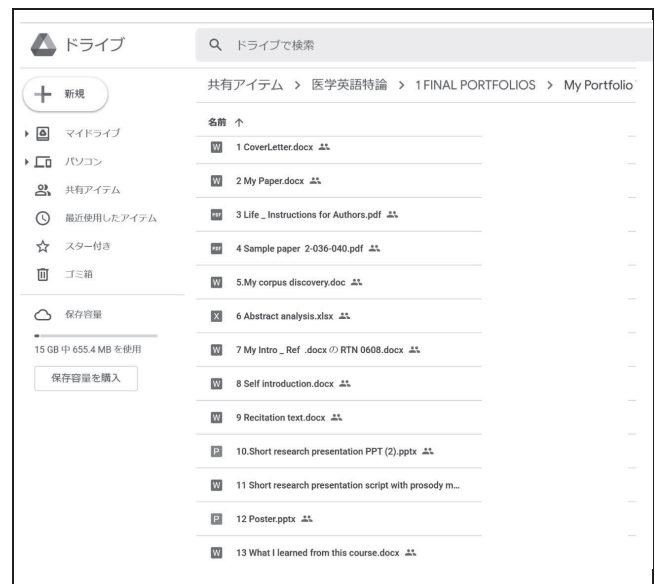


Figure 6. Example of items uploaded to a portfolio folder



Figure 7. QR code to access the presentation videos

praised me after my final presentation.

- I wish I could have taken the class for a whole year.
- I would like to make a presentation at an international conference someday, so if I have such an opportunity, I would like to make use of what I learned in this class.
- I had quite a bad feeling about English until I took this course because I did not know how to pronounce it and I did not have much vocabulary that I could remember.
- I had never been able to “speak English that others can understand,” so I was very anxious about it.
- With the help of translation software and Grammarly, I was able to compensate for the lack of vocabulary I had learned by creating English manuscripts, adding prosody markers while looking at KNote, which is a basic manual of pronunciation and grammar written by Ms. Nitta, and practicing reading aloud a lot.
- To be honest, I had never imagined that I would have to read the submission rules and structure my paper before submitting it, or that I would have to analyze what kind of grammar is often used using a software, Antconc.
- Learning the way the slides were composed and made was also very helpful. I would like to use illustrations, use bullet points, etc. in my future presentations.
- I had been running away from English because I did not know where to start. This course taught me a lot of things I had never thought about before, from English pronunciation to how to use rhythm markers, how to write papers, etc., and the content was all useful for the future.
- My dream of presenting at international conferences and submitting papers to international journals is no longer a dream, and now I am confident that I can achieve it. I will definitely make use of what I learned in this medical English course and actively challenge various things.

## CONCLUSION

We were able to demonstrate the success of our Autonomous Learning Course. Even students who did not have high proficiency in English could learn how to autonomously read and write papers in English and give oral and poster presentations in English in this half-year program.

As the students’ comments indicate, they gained the confidence to write papers in English and make presentations at international conferences in the future. We hope that the seeds we have planted will one day bloom and flourish.

## ACKNOWLEDGMENTS

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