

# **Online and Face-to-Face Group Presentation Activities Focusing on Interprofessional Collaboration: A Comparative Case Study of First-Year Medical Welfare Students**

Junko KOSAKI (Kawasaki University of Medical Welfare)

# Online and Face-to-Face Group Presentation Activities Focusing on Interprofessional Collaboration: A Comparative Case Study of First-Year Medical Welfare Students

Junko KOSAKI (Kawasaki University of Medical Welfare)

**要旨** 本研究では、多職種連携教育の視点を踏まえた英語グループプレゼンテーション活動を、2020年度では非同期型オンライン授業、2021年度では対面授業で実施し、異なる授業形態が学習に及ぼす影響を検証した。対象者は医療福祉専攻の大学1年生で、大学後期の授業活動の一環として、他学科の学生と協力して、医療福祉のテーマに関するポスターを作成し、発表を行った。活動後アンケートから、対面授業の方が「他学科の人と関わる良い機会となった」「全員で協力できた」と回答した学生の割合が高く、オンライン授業の方が「異なる専門分野を知る良い機会となった」「選んだテーマに関する知識を深めることが出来た」と回答した学生の割合が高かったことがわかった。この結果、対面授業は学生間の交流を深め、協働学習への積極的な参加を促す効果が高い一方で、非同期型オンライン授業は専門知識の学びに対する関心を高める可能性があることが示唆された。

## 1. Introduction

As medical care has become more sophisticated and patients' demands have diversified, medical and other healthcare professionals are required to work in collaboration more than ever to meet such demands (Otsuka et al., 2004). Accordingly, interprofessional education (IPE) in undergraduate education is required in response to these demands (Asahina, 2011). IPE is defined by the Center for the Advancement of Interprofessional Education as “occasions when members or students of two or more professions learn with, from, and about each other to improve collaboration and the quality of care and services” (p. 1). Gilbert et al. (2010) reiterated IPE as a necessary step in preparing a collaborative and practice-ready healthcare workforce in its World Health Organization Report. Moreover, the Model Core Curriculum for Medical Education in Japan (2016) cites the importance of advancing the understanding of team care and acquiring the ability to work with other medical professionals. In correspondence to this trend, this study aims to incorporate the concept of interprofessional collaboration into language learning in a Japanese EFL setting.

The impact of the COVID-19 pandemic was another important factor in this study. The spread of the pandemic has caused many educational institutions to shift from face-to-face to online learning (Rashid & Yadav, 2020). The group presentation activities in this study had to

be adjusted according to the asynchronous online classes in the academic year 2020. Synchronous online platforms, including Zoom, were not available owing to institutional constraints. By contrast, in 2021, the activities were conducted face-to-face as previously designed. Therefore, another purpose of this study is to investigate students' perceptions of team collaboration and language learning conducted in different learning styles (i.e., online versus face-to-face).

## **2. Background**

### **2.1 The recent trend of interprofessional education in Japan**

The Model Core Curriculum mentioned in the previous section has urged several medical universities to incorporate IPE in their curriculum, and it has also encouraged some universities to develop a four-year systematic IPE program in which students from different disciplines begin learning basic communication skills and engage in group discussions on particular clinical cases (Kiuchi et al., 2014). Concerning this, Tamura et al. (2012) investigated the importance of early exposure to clinical practices and discussed IPE's influence on the learning abilities of first-year students. Furthermore, Taguchi (2019) emphasized the importance of encouraging students to respect each other and communicate their thoughts and feelings to others, at the introductory level of IPE. Therefore, it seems worthwhile to explore the possibilities of introducing communicative activities as interprofessional collaboration in first-year English classes.

### **2.2 Content and language integrated learning**

To promote learner autonomy, content and language-integrated learning (CLIL) has been adopted in various educational institutions recently. CLIL is a methodological approach in which foreign language learning is integrated within content learning or knowledge construction (Coyle et al., 2010). Although the individual teaching methods and concepts used in CLIL already existed, this approach is often regarded as innovative as it effectively combines the so-called 4Cs (i.e., content, communication, cognition, and culture) (Coyle et al., 2010).

In Japan, some tertiary institutions have used CLIL methods in combination with teaching English for specific purposes (Sasajima, 2013), or the entire syllabus of an academic English program has been developed based on the concept of CLIL (Watanabe et al., 2011). In previous studies, Sasajima et al. (2011) highlighted that CLIL could be an effective way to motivate language learners at the tertiary level, especially in the first year at university, because this is the transitional period between learning general English and advanced

academic English. Moreover, Watanabe et al. (2011) state that there can be many variations of CLIL depending on the realities of the educational setting. Soft CLIL, which is one of the variations proposed by Bentley (2010), was adopted in this study.

### 2.3 Online versus face-to-face in language learning

Among the numerous studies concerning online and face-to-face learning, some of them show the advantages of the former. Among them, Warschauer (2002) suggested that computer-mediated communication could offer a non-threatening environment for less-proficient learners, which would promote equal participation among students. In addition, Chen et al. (2008) reported that distance online learners gained higher engagement in the amount of reading, writing, and reflective thinking activities than their campus-based counterparts did. However, from the viewpoint of collaborative learning, distance learners were less involved than campus-based students. A study conducted by Kemp and Grieve (2014) also identified the characteristics of online and face-to-face classes through a writing task and subsequent discussions after the task. Students appreciated the convenience of completing the writing activities online at their own pace, but they preferred to have discussions in a classroom setting, reporting that they felt more engaged. Similarly, a study of asynchronous and synchronous online discussions conducted by Peterson et al. (2018) suggested that synchrony had a positive effect on students' sense of belonging and cooperation, whereas asynchronous students tended to refrain from expressing their negative emotions within the discussions. In other words, online discussions did not foster productive interaction.

### 3. Research questions

As per the overview, it seems that both IPE and language learning through the concept of CLIL have enormous potential in education. It is worthwhile in English language learning to provide students with the opportunity to work collaboratively across interdisciplinary boundaries and understand each other's areas of expertise. However, little research has been done on incorporating IPE into language learning. Besides, a comparison between the online classes during the pandemic and the subsequent face-to-face classes will be meaningful when we plan activities focusing on interprofessional collaboration in post-pandemic education.

Therefore, this study aimed to investigate the possibility of implementing collaborative activities that incorporate IPE into language learning for first-year medical welfare university students and to explore the implications of the effects of online and face-to-face learning on students majoring in health and medical welfare in Japan.

**RQ1.** Is there any benefit of implementing IPE-oriented collaborative group work in the first year of English education?

**RQ2.** Are there any differences in students' perceptions of group work focusing on interprofessional collaboration between online learning and face-to-face learning?

**RQ3.** Are there any differences in students' perceptions of English learning between online learning and face-to-face learning?

## 4. Data and Method

### 4.1 Participants

The participants in the study were 335 first-year university students at a medical welfare university in Japan, (181 in 2020 and 154 in 2021) who registered for the compulsory subject "Basic English I." The instructor of the participating classes was the researcher. Table 1 shows that each class consisted of students from several medical and healthcare departments.

**Table 1**

*Details of the Participating Classes*

Number of students	2020 (n=181)	Class A 51	Class B 65	Class C 65
	2021 (n=154)	Class D 50	Class E 52	Class F 52
Details of departments		<ul style="list-style-type: none"> <li>• Social work</li> <li>• Clinical psychology</li> <li>• Medical welfare for children</li> <li>• Nursing</li> </ul>	<ul style="list-style-type: none"> <li>• Physical therapy</li> <li>• Occupational therapy</li> <li>• Speech-language pathology and audiology</li> <li>• Orthoptics</li> <li>• Medical technology</li> <li>• Radiological technology</li> <li>• Medical engineering</li> <li>• Clinical nutrition</li> <li>• Health and sports science</li> </ul>	

All English classes were organized with students from the same faculties, namely, the Faculty of Health and Welfare and the Faculty of Nursing in Class A and Class D; and the Faculty of Rehabilitation and the Faculty of Health Science and Technology in the remaining four classes. Nevertheless, not all departments or faculties were put together in one class owing to curriculum organization constraints. Additionally, the students were assigned to designated classes based on the results of the placement test,<sup>1)</sup> performed at the beginning of first semester. Based on the test results, the English proficiency of the participants was estimated to be at a pre-intermediate level, which is equivalent to third to pre-second grade in

the EIKEN practical English proficiency scale, and A1.1 to A2.2 in the CEFR-J scale. This study received approval from the university’s ethics committee, and all participants signed the informed consent form.

#### 4.2 Teaching procedures

The study was conducted in the second semester between December and January in the 2020 and 2021 academic years, respectively. Four out of 15 lessons of “Basic English” were spent on the activities, and the participants presumably spent a total of 360 minutes (six hours) on the activities. The group presentation activities were provided as part of regular class activities. Regarding the other lessons, the students learned basic medical terminology and expressions from the course textbook.<sup>2)</sup> Owing to the COVID-19 pandemic, the lessons except the first one were conducted online in 2020 (Table 2).

**Table 2**

*Outline of the Group Presentation Activities*

Lesson		2020		2021
1st	In Class	Deciding on a topic	In Class	Deciding on a topic
2nd	Online	Preparing slides	In Class	Preparing slides and peer editing
3rd	Online	Peer editing and compiling slides into one PDF file	In Class	Making a poster and preparing for a presentation
4th	Online	Sharing slide materials and peer evaluation	In Class	Oral presentation and peer evaluation

The first lesson was conducted face-to-face in both 2020 and 2021. The students were divided into groups of four. The groups were pre-determined by the instructor so that the students from different departments were evenly mixed in each group. They began by brainstorming and deciding on a poster topic, which was to be about health or medical welfare. They also decided on the subtopics, with each member in charge of one.

In 2020, the subsequent lessons were conducted online. In the second lesson, the students summarized their assigned part on two PowerPoint slides. In the online classes, the instructions were mainly provided by video on demand, and the students worked on the task asynchronously. The students were also encouraged to discuss the format and layout of the slides with each other, using Microsoft Teams, during the slide creation phase. By the third lesson, all the students’ slides were submitted and stored in the instructor’s network drive, and then shared with the

students through weblinks created by the instructor. In the third lesson, the students were encouraged to post at least two comments on each other's slides within the same group. They were also required to compile their slides into one PDF file as a poster and submit it by the fourth lesson. In the fourth lesson, the students viewed other groups' posters via shared links created by the instructor and submitted online evaluations of the several group posters pre-assigned by the instructor. Since the largest class had 16 posters, only 7 posters were required to be peer-evaluated, to reduce the burden on the students.

In the face-to-face lessons conducted in 2021, the students summarized their assigned part on two PowerPoint slides in the second lesson, which was the same as in the online class. However, unlike the online classes, the slides were shared immediately within the group. Moreover, they discussed the layout and format of the slides together. By the third lesson, all the students' slides were submitted and printed out by the instructor. In the third lesson, the students pasted their slides on a large grid paper to make a poster. They also prepared for the upcoming presentation. In the fourth lesson, they orally presented the slides in groups. Each of the participating classes was divided into two large groups: odd-numbered groups and even-numbered groups; the groups listening to the presentations moved around and listened to different presentations one-on-one. The instructor decided to arrange the presentations this way because it would help reduce the students' pressure of speaking in front of many students. Additionally, repetition of the presentation would increase their fluency in English. There was also a Q&A session after each presentation, followed by an opportunity for the students to view the posters of the group presentations they had not heard. Finally, the students submitted online evaluations of several group posters, including posters from both the groups they had heard and the ones they had not heard.

#### 4.3 Post-questionnaire

After the group presentation activities, the participants completed an online anonymous questionnaire to provide feedback, which consists of 12 questions and an open-ended comment section at the bottom of the sheet (see Appendix). The questionnaire aimed to investigate the students' perceptions of IPE and their attitudes toward language learning. In preparing the questionnaire, the author referred to two scales: the Readiness of Interprofessional Learning Scale (RIPLS) (Parsell & Bligh, 1999) and the Common European Framework of Reference for Languages (Tono, 2013). However, the exact same items were not used in the questionnaire. The RIPLS was developed to determine the students' readiness for interprofessional learning, while the CEFR-J is the adapted version of the CEFR and is moderated exclusively for English language teaching-learning in Japanese contexts. The data obtained from the questions in the

questionnaire were solely quantitatively analyzed, whereas the text data in the open-ended comment area were analyzed both quantitatively and qualitatively.

## 5. Results of the post-questionnaire

### 5.1 Quantitative data of the questions

#### 5.1.1 Students' overall impressions of the group presentation activities

A total of 319 valid responses were obtained (169 in 2020 and 150 in 2021) from 335 participants. Owing to space limitations, the author focused on the results of the questions to highlight the differences between online and face-to-face classes. Table 3 shows the students' overall impression of the group presentation activities. It shows the question and the answer choices from the original post-questionnaire, as well as the number and percentage of student responses for each year. The differences between 2020 and 2021 were analyzed using a chi-squared test, and statistical analyses were performed with BellCurve for Excel (Social Survey Research Information Co., Ltd. Tokyo, Japan).

**Table 3**

*Students' Overall Impression on the Group Presentation Activities*

Q4. How did you find the group poster presentation activities with students from different departments? (Check all that apply.)	2020 (n=169)	2021 (n=150)	p-value
Enjoyable	43.8% (74)	71.3% (107)	<.001***
Good chance to interact with students from different departments	87.6% (148)	91.3% (137)	.277
Good chance to learn about other medical or healthcare professionals	34.3% (58)	24.0% (36)	.044*
Feeling nervous	32.5% (55)	33.3% (50)	.881
Feeling uncomfortable	4.1% (7)	1.3% (2)	.131

*Note.* The number of respondents for each answer is presented in parentheses.

\* $p < .05$ , \*\* $p < .01$ , \*\*\* $p < .001$

The results indicate a statistically significant difference between 2020 and 2021 in the percentage of students who found this activity “enjoyable” ( $p < .001$ ) and the percentage of students who thought this activity was “a good chance to learn about other medical or healthcare professionals” ( $p < .05$ ). This shows that face-to-face classes were more effective

at fostering social interaction, whereas online classes may have facilitated learning about other health or healthcare professionals. The results also reveal that there was no statistically significant difference in the percentage of students who regarded the group presentation activities as “a good chance to interact with students from different departments” between online and face-to-face learning. This suggests that the activities, regardless of the classroom settings, provided students with an effective chance to communicate with one another.

Concerning the potential effects of the activities, the findings in Table 4 correlate with those in Table 3. There was no significant statistical difference between the two years for any of the IPE-related questions, such as “significance of learning with students from different departments” or “significance of working with others.” This could imply that the activities in both online and face-to-face learning were efficient in enhancing preparation for IPE. Furthermore, a higher percentage of students in the face-to-face classes reported learning English expressions, whereas a higher percentage of students in the online classes reported learning knowledge about the poster topics, even though there were no statistically significant differences between the answers related to learning English expressions and knowledge about the poster topics. This suggests that students in face-to-face classes were more aware of their English learning, whereas those in online classes were more content-oriented.

**Table 4**

*Possible Learning Outcomes from the Group Presentation Activities*

Q7. What do you think you learned from the group presentation activities? (Check all that apply.)	2020 (n=169)	2021 (n=150)	p-value
English expressions about the poster topics	51.5% (87)	58.7% (88)	.198
Knowledge about the poster topics	65.7% (111)	58.0% (87)	.158
Significance of learning with students from different departments	64.5% (109)	66.0% (99)	.778
Significance of working with others	65.1% (110)	66.7% (100)	.767
Other	3.6% (6)	0.0% (0)	.101

\* $p < .05$ , \*\* $p < .01$ , \*\*\* $p < .001$

### 5.1.2 Results of the responses in the open-ended section

A total of 202 valid comments were received in the open-ended section from 335 participants (127 out of 169 in 2020 and 75 out of 150 in 2021). The lower response rate in 2021 could be because more students attempted to complete the online questionnaire during class;

consequently, they may not have had sufficient time to provide free comments in the open-ended portion.

The responses were analyzed using KH Coder Version 3 developed by Higuchi (2016). It is a commonly used free Japanese software for statistical analysis of test-based data. The text data were decomposed into words based on the different parts of speech. Common words for free comments like “think” and “feel” were eliminated throughout the analysis because they were considered less important for the content analysis of the comments. In addition, the phrase “different departments” was intentionally extracted because it is an essential term associated with IPE. The analysis was initially performed in Japanese, and then the findings were translated into English with great care.

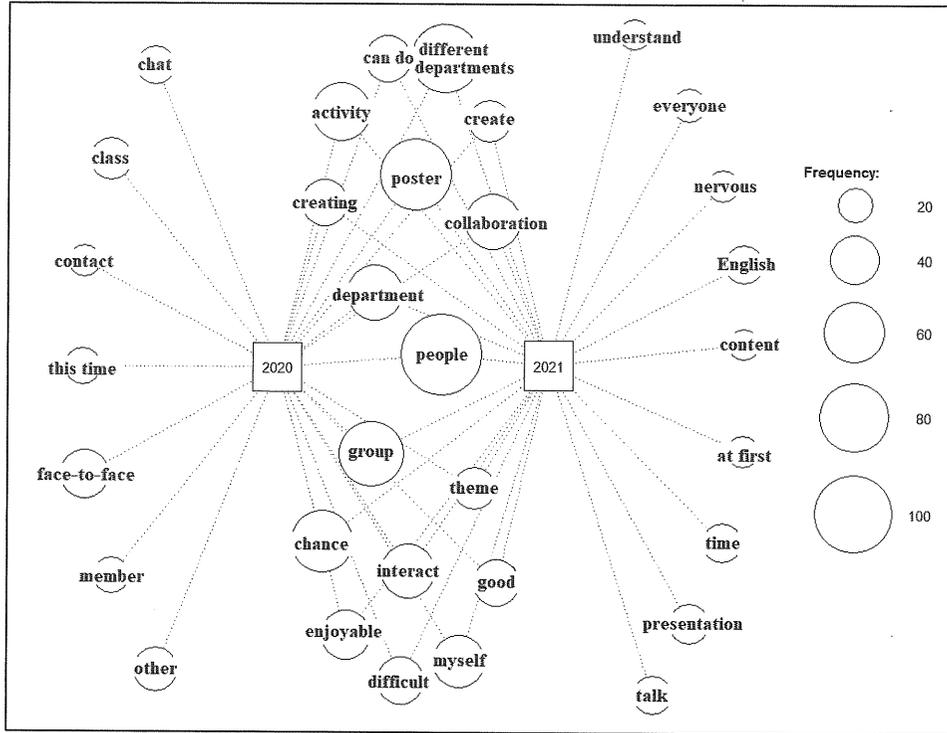
Figure 1 shows the co-occurrence of characteristic terms by year. Words with 10 or more occurrences were extracted to determine which terms frequently appeared each year. The left side of the figure shows the distinguishing terms for the year 2020, whereas the right side shows those for the year 2021. In the middle of the figure are words that were frequently used in both years. The size of the circle indicates the frequency of occurrence.

Numerous words appeared in both years, as shown in the figure, including “different departments,” “collaboration,” “poster,” “create/creating,” and “activity.” The co-occurrence of these words implies that the students for both years collaborated throughout the poster-creation process. Moreover, words like “group,” “chance,” “interact,” and “enjoyable” suggest that the students valued engaging with peers from other departments, which is consistent with the findings of Table 3. However, regarding the differences between the two years, terms associated with online learning, such as “chat” and “face-to-face,” were more common in 2020, whereas those associated with English presentations were more typical in 2021.

Table 5 then lists the top 20 words based on word frequency. The word list for 2020 contains more occurrences of each term than that for 2021 because there were more replies in 2020 than in 2021. Nonetheless, the ranking demonstrates which terms were more likely to appear each year. Words like “collaboration” and “enjoyable” are ranked higher in 2021 than in 2020, as can be seen. This suggests that the students in face-to-face classes tended to appreciate the group project.

**Figure 1**

*Co-occurrence Network of Characteristic Terms by Year*



**Table 5**

*List of the Top 20 Frequently Used Terms in the Open-Ended Comment Section by Year*

Rank	2020 (Online)		2021 (Face-to-Face)	
	Term	Frequency	Term	Frequency
1	people	76	poster	35
2	group	51	people	35
3	poster	51	different departments	29
4	different departments	51	department	23
5	chance	48	collaboration	23
6	activity	37	presentation	22
7	face-to-face	37	group	20
8	interact	36	activity	20
9	myself	32	enjoyable	19
10	collaboration	29	chance	17
11	department	28	can do	16
12	creating	28	difficult	15
13	class	26	English	14
14	other	25	interact	14
15	chat	23	myself	14
16	difficult	23	good	13
17	good	23	talk [verb]	13
18	enjoyable	22	theme	12
19	member	20	time	12
20	create	20	different	10

## 5.2 Qualitative data

### 5.2.1 Comments related to IPE

The analysis in this section is concentrated on the key terms in the responses that appear to highlight the distinctions between online and face-to-face classes. KH Coder was used again to extract the responses containing each term, and subsequently, the content of each comment was examined. First, from the viewpoint of IPE, the comments containing the terms “learn” and “knowledge” were extracted and examined. There were 16 comments in 2020 and 7 comments in 2021 concerning the term “learn,” and neither year’s remarks differed significantly in terms of content; both years’ comments addressed learning about different departments and professions. However, regarding the term “knowledge,” despite the small number of comments (5 in 2020 and 3 in 2021), students in online learning provided specific responses, such as “I was able to learn about lifestyle-related diseases,” or “I was able to share the knowledge I’d learned in my department with other students through this group presentation activity.”

### 5.2.2 Comments related to online learning

The term “face-to-face,” which was a distinguishing word in online learning in Figure 1 and Table 5, was also examined in the comments where it was used because it was assumed that the term was utilized in relation to online classes by the students. Of the 37 comments, 21 were about the disadvantages of not being able to do the activities in face-to-face classes. Most of them referred to the difficulty of receiving a timely response from the other students via online chat, due to the different class schedules. Others mentioned their disappointment, saying they wanted to speak with students from other departments in person. However, there were a few remarks, such as “We were able to discuss our poster theme without any trouble by using chat,” or “I felt more comfortable communicating with other students via online chat than in person.”

### 5.2.3 Comments related to language learning

Finally, since the term “English” occurred frequently in face-to-face learning, the contexts in which it appeared were investigated. The most common of the 14 comments was how challenging it was to convey medical and healthcare content in English, which makes sense if we imagine the students looking up English translations of medical jargon while preparing their slides. However, there were some other positive comments, such as “I was happy to learn new medical terminology in English,” “It was difficult but fun to communicate in English,” “I was able to explain what I wanted to say in English in a more understandable

manner,” and “I will try to get used to using English in my daily life.” These comments imply that a positive attitude toward English learning was enhanced in face-to-face learning.

## **6. Discussion**

### **6.1 Students’ perception of group work focusing on interprofessional collaboration (RQ1)**

The findings of Tables 3 and 4 show that a large percentage of the students in both years answered that the group presentation activity was “a good chance to interact with students from different departments,” and that approximately 65% of the students in both years stated that they learned “the significance of learning with students from other departments” and “the significance of working with others.” Based on these findings, it can be concluded that the activity provided an opportunity for students to interact with students from different departments and recognize the importance of working in a team, to a certain degree, whether it was provided online or face-to-face. The outcomes shown in Figure 1 support this statement; the terms “different departments,” “interact,” “good,” “chance,” as well as “poster,” “creating,” and “collaboration” were common in both years. The co-occurrence of these words suggests that the activities in both years encouraged social interaction and collaboration among students from other disciplines, which may serve as an introductory stage for IPE. In this regard, language lessons might be a powerful addition to enhancing the communication skills required for IPE as discussed by Taguchi (2019).

### **6.2 Differences in students’ perceptions of group work between online and face-to-face (RQ2)**

Regarding the differences in students’ perception between online and face-to-face learning, one of the clear differences observed in Table 3 was that far more students in face-to-face learning thought group activities were “enjoyable” than those in online learning ( $p < .001$ ). This result extends the previous studies conducted by Kemp and Grieve (2014) and Peterson et al. (2018). The students’ discussion may have been facilitated and their enjoyment of the activity ultimately increased as it was easier to get immediate feedback in face-to-face classes than in asynchronous online classes. Furthermore, the results in Table 5 reveal that the word “collaboration” was ranked higher in the word frequency list for face-to-face classes than that for online classes, which may indicate that face-to-face classes were more successful at enhancing the sense of belonging to a group and solidarity among the members. In addition, considering the students’ earlier online learning experiences, we should understand that the students were required to participate in some online learning for a year and a half prior to this activity due to the pandemic. This fact may have raised their expectation of participating in the face-to-face group presentation activities the following semester and consequently

increased the percentage of the students who enjoyed the activities.

In the online classes, on the other hand, apart from the first class, student interaction was limited to exchanging online text messages or commenting on slides at the draft stage in an asynchronous manner. Therefore, some students found it difficult to maintain contact with other members and proceed with their group work; consequently, they were less likely to be engaged in group work than in face-to-face classes. However, as Warschauer (2002) suggested, some students felt more at ease texting their group members online to share their thoughts. In other words, asynchronous communication can be useful for relieving the stress that some students might have when they are collaborating in face-to-face learning.

### 6.3 Differences in students' perceptions of English learning between online and face-to-face (RQ3)

Regarding English learning, it is important to note that a higher percentage of students in face-to-face classes felt that they learned relevant English expressions through the group presentation activities even though there was no statistical difference in the students' answers to language learning between the two years in Table 4. Furthermore, there were several positive comments about learning English in the open-ended comment section for face-to-face learning, including the enjoyment of expressing oneself in English, the sense of accomplishment of being able to express oneself in English in an easy-to-understand way, and the importance of getting used to using English on a regular basis. However, many comments referred to the difficulty of expressing medical and healthcare content using technical terms. All these remarks show the students' genuine efforts to work on their group projects in English.

One of the major factors would be the oral presentation that the students had to make in class. The students repeated the same explanation several times to different audiences throughout the presentations, which may have enhanced their acquisition of the terminology and expressions related to their poster themes. This indicates that repetition through speaking is just as important for the acquisition of specialized vocabulary as output through writing. In this regard, had the students in online learning been allowed to present in English during online conferences or in the form of video recordings, for instance, similar outcomes might have been attained. Since the first-year students in 2020 appeared to be overwhelmed by the high volume of online homework, the instructor ultimately decided not to assign the speaking task to the students. However, to facilitate and reinforce students' learning of terminology, it will be essential to blend some spoken tasks with written exercises in any future asynchronous online English lessons.

Nevertheless, there was a slight statistical difference in the amount of content learned between the two years. The results of Table 3 indicate that students in online learning tended to learn about other medical and healthcare professions. In addition, the findings in Table 4 show that even though there was no statistically significant difference, a higher percentage of online learning students responded that they had learned new knowledge about the poster topics. Notably, positive comments, such as learning specific knowledge about lifestyle-related diseases or sharing their knowledge, were also found in the free responses of students in online learning. According to these results, the asynchronous online classes might have provided them with higher engagement in learning, writing, and reflective thinking (Chen et al., 2008). In addition, the final poster files were shared online, which enabled the students to view the files at any time, which is one of the advantages of asynchronous learning (Kemp & Grieve, 2014). This may have allowed the students to spend more time reading the other group posters than in face-to-face classes, which possibly made them feel that they had learned about diverse medical and healthcare topics.

These findings suggest that Soft CLIL (Bentley, 2010), which focuses on language learning, may be more effective in implementing collaborative activities in face-to-face classes. By contrast, combining asynchronous classes with more specialized content would be beneficial for students to develop their understanding of the content while working through assignments at their own pace.

## **7. Conclusion**

This study shows that group presentation activities in English classes focusing on interprofessional collaboration may be possible for first-year university students majoring in health and medical welfare. The results show that face-to-face classes were more effective in promoting interaction among students and encouraging their active participation in collaborative learning. The results also suggest that asynchronous online learning has the potential to increase students' interest in learning specialized knowledge with an increased focus on content.

However, this study does have certain limitations. First, no oral English presentations were performed in the online classes. In other words, the content of the language tasks in the two styles of classes was not the same; therefore, this may have affected students' perceptions of learning English terminology related to the poster themes. Second, this study simply compares the post-questionnaire results rather than surveying students' changes prior to and after the activities in each year. Further investigation is required to address these issues.

Furthermore, to examine other differences in the students' learning outcomes and

perceptions between online learning and face-to-face learning, future research should involve a detailed analysis of the content of the slides that the students have created, through text mining. Moreover, conducting a more thorough, concrete assessment of the students' understanding of medical and healthcare topics, as well as their proficiency with medical English terminology, is crucial. Nevertheless, this study, to some extent, may have clarified the benefits of both asynchronous online learning and face-to-face learning from the perspectives of IPE and CLIL. In the future, we would like to develop a lesson that encourages students to take part in group presentations, as well as reading and writing tasks that will support students' acquisition of specialized knowledge. Finally, it is hoped that more successful collaborative activities will enhance the teamwork of future medical professionals.

### **Acknowledgements**

This work was supported by a Grant-in-Aid for Scientific Research from the Japan Society for the Promotion of Science (No. 20K00853 [Bridging education for interprofessional collaboration in medical and healthcare education faculties] directed by Junko Kosaki). The author would like to thank Professor Lisa Yoshioka and the two anonymous reviewers for their constructive comments on an earlier version of this article. Special thanks also goes to Dr. Taichi Ohgishi and Dr. Fumitake Hyodo for their assistance with the statistical analysis. The author would also like to thank Editage ([www.editage.com](http://www.editage.com)) for English language editing.

### **Notes**

1. The placement test, introduced by the medical welfare university, is not one of the common vendor tests that include TOEIC or TOEFL, but is a completely custom-made test for students at the university. It comprises 35 questions to check their basic grammar knowledge and reading comprehension. The questions cover the level of third to second grade in the EIKEN, with an average score of 40.7 points in 2020, and 40.1 in 2021.
2. The title of the course textbook used in “Basic English I” is “Vital Sign 2: Reading and Writing” published by Nan'un-do (2014). It is designed for healthcare professionals to learn essential English.

### **References**

- Asahina, M. (2011). Purofessionaru e no shoki kyouiku no jissai: Senmonshoku renkei kyouiku (IPE)—Shitsu no takai senmonshoku renkei (IPW) o mezasu sotsumae kyouiku— [Education for professionals from junior medical students: Interprofessional Education (IPE)—Pre-graduate education for high-quality interprofessional work

- (IPW)—]. *The Journal of the Japanese Society of Internal Medicine*, 100(10), 3100-3105.
- Bentley, K. (2010). *The TKT course CLIL module*. Cambridge University Press.
- Center for the Advancement of Interprofessional Education (CAIPE). (2016). Collaborative practice through learning together to work together: Statement of purpose. <https://www.caipe.org/resource/CAIPE-Statement-of-Purpose-2016.pdf>
- Chen, P. D., Gonyea, R., & Kuh, G. (2008). Learning at a distance: Engaged or Not? *Innovate: Journal of Online Education*, 4(3), Article 3. <https://nsuworks.nova.edu/innovate/vol4/iss3/3>
- Coyle, D., Hood, P., & Marsh, D. (2010). *CLIL: Content and language integrated learning*. Cambridge University Press.
- Gilbert, J. H. V., Yan, J., & Hoffman, S. J. (2010). A WHO report: Framework for action on interprofessional education and collaborative practice. *Journal of Allied Health*, 39(Suppl. 1), 196-197.
- Higuchi, K. (2016). A two-step approach to quantitative content analysis: KH Codor tutorial using Anne of Green Gables (Part 1). *Ritsumeikan Social Sciences Review*, 52(3), 77-91.
- Japan Curriculum Organization Association. (2016). Japan medical education model core curriculum. *Kyouiku Hakusho*. [http://www.mext.go.jp/component/b\\_menu/shingi/toushin/\\_icsFiles/afieldfile/2017/06/28/1383961\\_01.pdf](http://www.mext.go.jp/component/b_menu/shingi/toushin/_icsFiles/afieldfile/2017/06/28/1383961_01.pdf)
- Kemp, N., & Grieve, R. (2014). Face-to-face or face-to-screen? Undergraduates' opinions and test performance in classroom vs. online learning. *Frontiers in Psychology*, 5, Article 1278. <https://doi.org/10.3389/fpsyg.2014.01278>
- Kiuchi, Y., Kurata, N., Takagi, Y., Takamiya, Y., Mayahara, M., Kataoka, R., Geshi, E., Suzuki, H., Tanaka, K., & Kurata, N. (2014). Systematic and stepwise interprofessional education in Showa University. *The Journal of the Japanese Society for Medical Education*, 45(3), 163-171.
- Otsuka, M., Shimazaki, M., & Oshima, N. (2004). Intaapurofeshshonaru kyouiku no genjou to tenbou—eikoku to nihon no kyouiku rei o chuushin ni— [The current status and prospects of interprofessional education—Focusing on educational examples in the U.K. and Japan—]. *Quality Nursing*, 10(11), 6-11.
- Parsell, G., & Bligh, J. (1999). The development of a questionnaire to assess the readiness of health care students for interprofessional learning (RIPLS). *Medical Education*, 33(2), 95-100. <https://doi.org/10.1046/j.1365-2923.1999.00298.x>
- Peterson, A.T., Beymer, P.N., & Putnam, R.T. (2018). Synchronous and asynchronous

- discussions: Effects on cooperation, belonging, and affect. *Online Learning*, 22(4), 7-25. <http://doi.org/10.24059/olj.v22i4.1517>
- Rashid, S., & Yadav, S. S. (2020). Impact of COVID-19 pandemic on higher education and research. *Indian Journal of Human Development* 14(2), 340-343. <https://doi.org/10.1177/0973703020946700>
- Sasajima, S., Mehisto, P., Marsh, D., Frigols, M. J., Saito, S., Ikeda, M., Suzuki, M., Sato, H., Yassin, S. M., & Hemmi, C. (2011). *CLIL atarashii hassou no jugyou—Rika ya rekishi o gaikokugo de oshieru!?*— [CLIL Classrooms with new ideas—Teaching science and history in a foreign language!/?—]. Sanshusha.
- Sasajima, S. (2013). How CLIL can impact on EFL teachers' mindsets about teaching and learning: An exploratory study on teacher cognition. *International CLIL Research Journal*, 2(1), 55-66.
- Taguchi, T. (2019). Sainokuni renkei ryoku ikusei purojekuto (SAIPE) to wa [What is the Sainokuni project to develop collaborative skills (SAIPE)?]. In S. Shibazaki, Y. Yoneoka, & M. Furuya (Eds.), *Hoken iryo fukushi no tame no senmon shoku renkei kyouiku puroguramu* [Interprofessional education program for health, medical, welfare] (pp. 24-30). Minerva Shobo.
- Tamura, Y., Bontje, P., Taru, C., Shirakawa, T., & Ishikawa, Y. (2012). From classroom learning to early exposure clinical practice: Influence of interprofessional education on first year students' learning. *The Journal of Interprofessional Collaboration in Health and Social Care*, 4(2), 84-95. [https://doi.org/10.32217/jaipe.4.2\\_84](https://doi.org/10.32217/jaipe.4.2_84)
- Tono, Y. (Ed.) (2013). *The CEFR-J handbook: A resource book for using CAN-DO descriptors for English language teaching*. Taishukan.
- Warschauer, M. (2002). Networking into academic discourse. *Journal of English for Academic Purposes*, 1(1), 45-58. [https://doi.org/10.1016/S1475-1585\(02\)00005-X](https://doi.org/10.1016/S1475-1585(02)00005-X)
- Watanabe, Y., Ikeda, M., & Izumi, S. (2011). *CLIL (content and language integrated learning) new challenges in foreign language education at Sophia University volume 1: Principles and methodologies*. Sophia University Press.

**Appendix—Post-questionnaire (In Japanese, translated by the author of this article.)**

**Q1. Did you work hard on the group presentation activities?**

(1) Strongly agree (2) Agree a little (3) Neither agree nor disagree (4) Disagree a little (5) Strongly disagree

**Q2. How many hours did you spend on preparation for the group presentation activities outside the classroom?**

(1) Hardly any (2) 1 to 2 hours (3) 2 to 3 hours (4) 3 to 4 hours (5) More than 4 hours

**Q3. What materials did you use as your reference? (Check all that apply.)**

(1) Vocabulary learned in English class (2) Contents learned in specialized subjects (3) Textbooks (4) Books and magazines (5) The Internet

**Q4. How did you find the group poster presentation activities with students from different departments? (Check all that apply.)**

(1) Enjoyable (2) Good chance to interact with students from different departments (3) Good chance to learn about other medical and healthcare professions (4) Feeling nervous (5) Feeling uncomfortable

**Q5. Did you learn anything from working with students from different departments?**

(1) Strongly agree (2) Agree a little (3) Neither agree nor disagree (4) Disagree a little (5) Strongly disagree

**Q6. When deciding on a medical welfare topic for your group poster, what factors did you take into consideration? (Check all that apply.)**

(1) All members must be interested in working on it. (2) Each member's expertise must be utilized to some extent. (3) Members have some knowledge of the subject. (4) The topic is familiar to the members. (5) It is one of the current topics.

**Q7. What do you think you learned from the group presentation activities? (Check all that apply.)**

(1) English expressions about the poster topics (2) Knowledge about the poster topics (3) Significance of learning with students from different departments (4) Significance of working with others (5) Other

**Q8. Did you collaborate with members of the same group on the group presentation activities?**

(1) Very much (2) To some extent (3) Not so much (4) Not at all

**Q9. What did you pay attention to when creating a poster? (Check all that apply.)**

(1) Using plain words and expressions (2) Avoiding using too many technical terms (3) Using illustrations or graphs effectively (4) Summarizing the major points clearly (5) Other

**Q10. In which language did you give the oral presentation?**

(1) In English only (2) Partly in English, mostly in Japanese (3) In Japanese only

**Q11. Would you like to have more opportunities to learn together with students from different departments to understand each other's academic major and profession?**

(1) Strongly agree (2) Agree a little (3) Neither agree nor disagree (4) Disagree a little (5) Strongly disagree

**Q12. Do you think that opportunities to learn together with people from other departments in university classes will help you work in a team in your future medical field?**

(1) Strongly agree (2) Agree a little (3) Neither agree nor disagree (4) Disagree a little (5) Strongly disagree

**Please enter below if you have any further comments or reflections on the group presentation activities which you could not write above.**