

Introducing a CLIL-based speaking battle task for university-level ESP learners in Japan

日本の大学レベルの ESP 学習者向けの CLIL ベースのスピーキング バトル タスクの導入

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ABSTRACT

Traditionally, Japanese engineering universities provide students with classes in technical English focusing on all four skills with significant leverage given to speaking assessment. Learners are often required to provide a technical oral presentation at the end of their English course. Because speaking in English is essential for engineers to communicate in the global business landscape, this paper focuses on how the author developed speaking competencies in her technical English class. More specifically, using CLIL, the author developed a speaking task to develop and practice technical speaking skills, which enabled learners to provide better oral presentations.

KEYWORDS: Technical English, English for specific purposes, CLIL

1. INTRODUCTION

Global workspace communication skill is the ability to interact with people in various settings. Doing it without diffidence and with confidence differs for everyone—this skill aggrandizes with motivation and guidance from good communicators. Engineering students in the modern world need the ability to send and respond to messages from professionals that may differ in language, customs, and culture (Weedmark, 2023). While technical skills are indispensable, the National Academy of Engineering report on Educating the Engineer of 2020 lists communication skills as essential for the technical workforce of 2020.

Asian Engineers encounter difficulty entering the workforce, stiff competition, and difficulty interacting in English as they studied in their mother tongue. Most Japanese Engineering students confront this difficulty. In Japan, engineering students primarily study technical subjects in Japanese, giving less room for learning technical English. Technical English is a required course for engineering students in engineering colleges

throughout Japan, as Japanese universities have acknowledged the significance of English in engineering education. The *Top university project* by MEXT reinforces Japanese higher education's significant competitiveness and attracts international students. Most technical English courses give equal importance to all four skills, but oral presentations are weighted heavily. Since the students have had very little exposure to English speaking and presentations in high school, preparing for oral presentations is a big challenge for the students and teachers. In this paper, the author will explain (1) What difficulties are faced by students; (2) How the author has developed speaking competency in engineering students; (3) How the speaking task battle has enabled learners to stimulate CLIL-based practice in technical speaking and prepare them for better oral presentations.

2. LITERATURE REVIEW

2.1 Communication competencies for engineering students

Communication competence is a prerequisite for any student's academic, personal, and professional success. Likewise, well-developed communication skills are essential for any professional and are a highly desired competency in the field of Engineering. Workplace communication is essential in helping engineering students build interpersonal skills. They must demonstrate a sincere interest in getting to know people during their first meeting and treat everybody respectfully and courteously. While exchanging ideas, engineers need to understand that people have different attitudes and perspectives. In a survey of professors across various institutions and disciplines, the two main problems faced by EFL students were students needing to be more willing to participate in class discussions and to ask and respond to questions (Ferris & Tag, 1996). They also suggested that teachers provide content-based instruction and practical communication skills practice in the class.

In a systematic review including 52 studies (27 quantitative and 25 qualitative) addressing the required competencies for engineers, Passow and Passow (2017) indicated that communication is among the 16 most generic competencies – one of the most important, and Engineers spend half their work time communicating. Passow and Passow concluded that an outstanding engineer is a combination of technical and human-related skills. Iijima et al. (2010) explained that an engineer's creative and conceptual ability is relevant only if the engineer can effectively communicate the end product to the international audience. They also portray the importance of written and oral communication competencies, firmly pointing out that the ability to make an effective presentation to clients in meetings and at conferences requires both instruction and practice (Iijima et al., 2010). In a study conducted at a Japanese engineering and computer science university, Danielewicz-Betz and Kawaguchi (2014) argued for more significant measures to improve communication and other required global skills for Japanese graduates. Spanish civil engineering students have emphasized the need to develop speaking competencies for Technical English as they agree on the importance of technical English for future careers (Romero et al., 2017). Abid et al. (2008) considered communication competence crucial to increase Malaysian engineering students' employability. They evaluated a speaking module's role in developing students' oral competencies and confidence, where the students achieved considerable improvement. The authors also point out that a future engineer's ability to communicate

internally or externally determines the success of any organization and proves one's capacity to deal with associates, subordinates, managers, clients, and investors. The above studies have all argued for a greater focus on developing engineering students' communication skills. All studies portray the importance of Content and Language Integrated Learning (CLIL) for technical students, especially in oral communication.

2.2 Content language integrated learning

Content and Language Integrated Learning (CLIL) is an approach in which a second language and subject content are taught simultaneously (Coyle, et al., 2010). According to Coyle et al. (2010), CLIL practice is established on the 4Cs framework: Communication (using language to learn while learning to use language); Cognition (thinking and understanding); Content (developing knowledge, skills, and understanding of the subject); and, Culture (self and other awareness/citizenship) which, are the rudimentary skills engineering students at Japanese universities need to acquire.

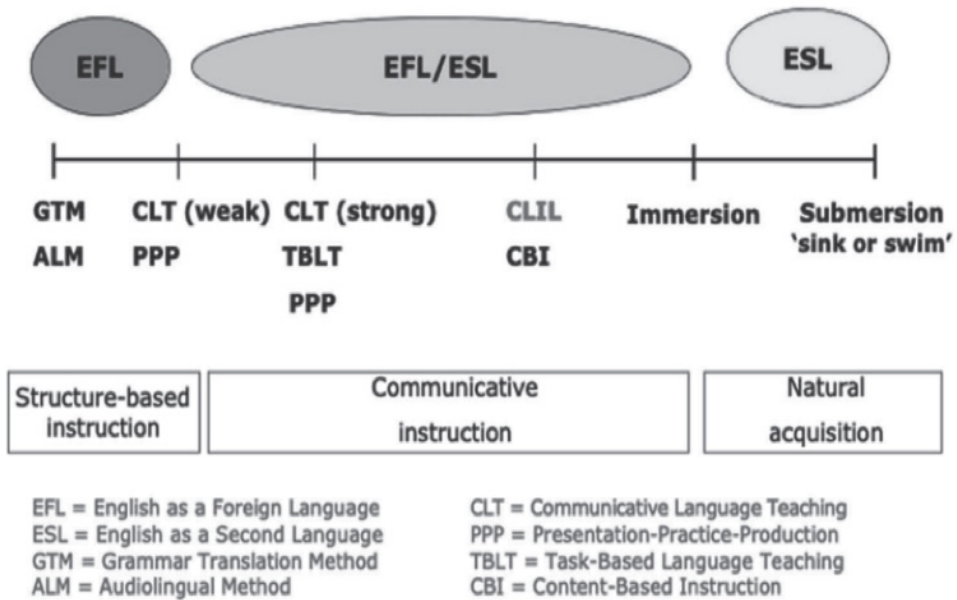
Tedick et al. (2011) define *immersion programs* as those in which at least 50% of learning takes place in the foreign, or target, language. CLIL, on the other hand, can be considered an 'umbrella term' (Mehisto et al., 2008, p. 12), covering a wide range of strategies and methods for teaching and learning in a target language. Almost equal attention is given according to the learner's needs at any point in the learning process. The learners likely consider the foreign language used (e.g., English in the Japanese context) an essential subject being taught, which is believed to enhance motivation (Coyle et al., 2010). Learners acquire knowledge about the content of the subject and language at the same time. It is a methodology that can improve interest in learning English and encourages students to improve their fluency by focusing more on the content than on English language study. It is not a new way to teach English as a foreign language, but it has been widely practiced in most European countries since the 1990s. Here are some benefits of CLIL methodology as illustrated on the European Commission's website (CLIL's Benefits, 2012): (1) it develops intercultural communication skills, (2) it improves language competence and oral communication skills, (3) it develops multilingual interests and attitudes, and (4) it provides opportunities to study content through different perspectives.

Figure 1 (adapted from Ikeda, 2012), indicates the position of CLIL in the continuum of English language teaching methodology. CLIL is a communicative approach placed around the middle of the continuum between structure-based instruction and natural acquisition. On a nexus of language teaching methodologies, CLIL is towards the English as a second language (ESL) marker. According to Ikeda (2012), there are five core features of a CLIL curriculum: (1) Content: contents from a subject or various topics are placed as the main focus of learning; (2) Language: an additional language (English) is used as a tool to learn a subject or particular topics rather than to study the language itself that is being used as a medium of instruction; (3) Activities: authentic materials are used for learning, and four language learning skills are incorporated. Authentic materials include newspapers, magazines, and online materials that are not prepared for language learning; (4) Academic achievement aims to boost students' knowledge, language, and cognitive skills; and (5) Learning theory: both approaches are based on theories that learning is facilitated by providing input that learners' can comprehend, and creating interactive

opportunities for communication between teachers and peers.

Figure 1

The position of CLIL in English language teaching methodology (Ikeda, 2012, p. 2)



2.3 CLIL studies in Europe and Japan

Studies reveal across Europe that the CLIL approach encourages more positive outcomes in terms of foreign language acquisition than traditional EFL courses (Basque Institute of Educational Evaluation and Research, 2007; Lasagabaster, 2008; Ruiz de Zarobe, 2008; Várkuti, 2010). Other scholars have found evidence of greater motivation levels among pupils taking CLIL classes than those taking traditional language classes (Seikkula-Leino, 2007; Lasagabaster & Sierra, 2009; Lasagabaster, 2011). Novitasari et al. (2021), for example, noted that their tour guide students could use technical language more effectively, improve overall English speaking skills, and improve tourist guiding competency after a CLIL-focused course. In another study by Delliou and Zafira (2016), the researchers observed improvements in Greek students' English speaking after a CLIL course. Likewise, Pinner (2013), when considering the effects of a CLIL course for Japanese EFL students, concluded that CLIL provided a better vehicle for language exposure and production.

CLIL has been gaining popularity in Japan, especially in English education (Brown, 2015). Research and publications have increased, particularly in university bulletins, over the past several years. The number of articles containing the keyword CLIL on CiNii (<https://ci.nii.ac.jp/>), a database of publications in Japan, more than doubled between 2013 and 2019. This search on CiNii also revealed that CLIL in Japan, when the approach was adopted, was mainly in English language classes, unlike in Europe. CLIL was originally developed as “a set of methods that could help subject teachers support the language needs of their students” (Ball et al., 2015, p. 27), and this content-led approach is now referred to as hard CLIL. On the other hand, the language-led CLIL approach,

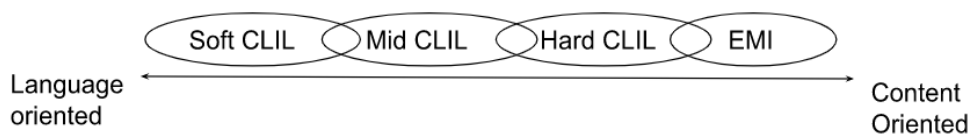
which emphasizes developing the target language skills than the content knowledge, is referred to as soft CLIL (Ikeda, 2013). Soft CLIL has been the more mainstream CLIL approach in Japan than hard CLIL mainly because English is used as a foreign language (EFL), and not widely used outside the classroom. Therefore, it is necessary to investigate the relevance of the hard CLIL approach to academic subject courses offered in English at Japanese universities.

In Japan, the basic concepts of the CLIL approach have been introduced and discussed intensively in the last decade by several scholars and practitioners (Iyobe & Brown, 2011; Izumi et al., 2012; Koike, 2016; Watanabe et al., 2011). The implementation of this approach in Japanese universities has also been reported (Ikeda, 2013; Ikeda et al., 2016; Iyobe & Brown, 2011; Parsons & Caldwell, 2016), but the focus has remained on CLIL's theoretical background, feasibility, and potential difficulties. MacGregor (2016) argued that more discussion, writing, and research are needed on CLIL education in Japan. Although Morikoshi, et al. (2015), and Yoshida and Morikoshi (2011) have reported on the introduction of a CLIL approach, the teaching of this subject using such an approach remains an understudied area.

Content-related classes taught in English at Japanese universities can be classified along the continuum from soft CLIL to English as a Medium of Instruction (EMI), as illustrated in Figure 2. This figure shows the relationship between CLIL and EMI. If EMI courses are defined as lectures and seminars taught by subject instructors without language support, then the hard CLIL can be considered as EMI courses with systematic language support. Ball (2018) emphasizes that the axis of hard CLIL is language support, as an essential aspect. The mid (or 'comfortable') version of CLIL is one where lesson subjects, or parts of subjects, are taught via a foreign language with dual-focused aims and where learning is a combination of both language and content.

Figure 2

Content-related classes taught in English at Japanese universities



2.4 Difficulties faced by the student in the Technical English class

Japanese students tend to have experienced rigorous English grammar translation training in high school while speaking skills are underemphasized. In the context of classroom learning, we observe that Japanese students seldom initiate discussions, ask clarifying questions, or volunteer answers (White, 1987). Some research studies show that graduates with limited English knowledge need much more to be done, especially in communication (e.g., Collins et al., 2000; Gomlesksiz, 2007; Ward, 2009).

Teachers encounter various challenges while helping students speak in the

classroom. These include diffidence, lack of topical knowledge, and mother tongue use. As most students in the technical English class had their entire education in Japanese, the author observed most of the above speaking problems. The author noticed initially that most students needed support presenting an oral presentation even though their TOEIC scores demonstrated upper-intermediate language proficiency.

Since students had difficulty giving a technical oral presentation, the author applied a pedagogical speaking practice that enabled them to practice technical speaking by stimulating CLIL use in class effectively.

3. METHODOLOGY

3.1 Context of the study

The “Technical English” course is a course in the English language curriculum at a Japanese university. The present study is focused on implementing a mid-CLIL speaking activity for one semester to explore its effects and challenges with a focus on language support for final oral presentations. This study was conducted as action research for a technical English course lasting 14 weeks (21 contact hours). The students were fourth-year engineering students majoring in computer science and mechanics. Their average TOEIC score was over 600 points. The program focuses on all four skills, reading, writing, listening, and speaking, with a significant portion focusing on the speaking component. An oral presentation was the final part of students’ grades.

3.2 Developing speaking competencies

A textbook (Ibbotson, 2009) is used for self-study purposes, and the reading exercise is a required weekly homework component. The textbook reading uses technical words familiar to students in their mother language; therefore, they had little difficulty completing the exercise. The students were outstanding in reading but had difficulty expressing themselves in speaking. When preparing and developing materials, especially for language support, frameworks, principles, strategies, and previous studies on CLIL as well as insights from EFL classes were used for reference. Previous studies have identified effective strategies for providing language support in CLIL courses that include teacher talk (Coxhead, 2017), repeated exposure to related language in activities (Turner & Fielding, 2020), use of textbooks (Coxhead & Boutorwick, 2018), scaffolding (Mahan, 2020; Yakaeva et al., 2017), and development of materials designed specifically for hard CLIL (Ball, 2018). The author decided to use self-study reading exercises for classroom speaking practice, and created questions based on the reading that allowed learners to explain and discuss important technical terms in their own English. These discussions indirectly led to technical speaking practice. The questions tried to stimulate content-integrated language learning–CLIL. Figure 3. shows the author's worksheet based on the textbook self-study lesson. Using the engineering student's self-study textbook, the author created a CLIL stimulating speaking worksheet based on the technical terms in the lessons for more relaxed speaking practice, which enabled the students to practice more technical conversations

Figure 3

Example speaking worksheet

ICT - unit 3

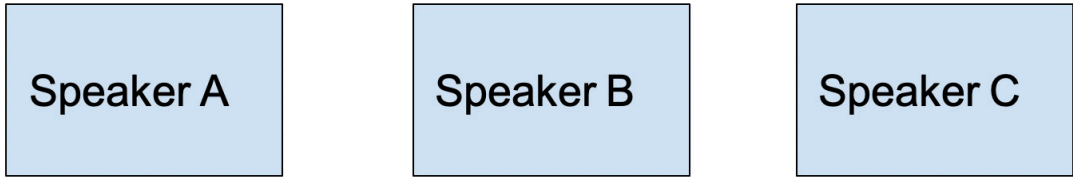
1. Why is the mainframe called one of the most powerful types of computers? Explain in your own words
2. Do you have a desktop pc in your house? What are the advantages and disadvantages of using a desktop pc?
3. Is a laptop better than a desktop pc? Explain why?
4. Name the laptop that you have. Can you name the specification of your laptop?
5. How long have you been using your laptop? Do you want to use the same laptop?
6. Which one would you prefer if you plan to change to a new laptop? Explain why?
7. What is a USB? What are the different types of USB ports that are available?
8. What is a battery pack? What are they used for?
9. What is a touchpad? Does your laptop have a touchpad? What do you think are the uses of a touchpad?
10. What is a tablet pc? Can you name some tablet PCs that are currently available in the market?
11. What do you think are the advantages and disadvantages of using a laptop and a tablet pc?
12. What is a stylus? Have you used it before? Can you recommend a good one?
13. Have you heard about wearable computers? Do you think the apple watch is a wearable computer? Are they useful for people in their daily life?
14. Is wireless technology a boon or a curse? What is your view?
15. What do you think will be the future of the computer system? They have been evolving rapidly, so can you predict the future of computer systems?

3.3 The conversation battle process

One reading lesson is allotted for weekly self-study practice, and the author instructs the students to read the content. In the following class, the conversation worksheet is distributed for speaking practice. To stimulate greater learner engagement, speaking was conducted as a conversation battle. The students were randomly divided into groups of three.

Figure 4

First-round speaking order



Speaker A starts by answering speaker B, and C listens to their exchange. Once completed, Speaker B answers the same question while A and C listen. Lastly, Speaker C answers the same question (See Figure 4). After answering the question, each speaker must complete an online form to rate the opposition speakers and select the best speaker (Figure 5). In the next round, speaker B answers the second question while the others listen (Figure 6), followed by speaker C and speaker A (Figure 7).

Figure 5

Peer review form for speaking battle

Name of the 1st speaker *

Short answer text

Name of the 2nd speaker *

Short answer text

points for speaker 1 *

9 - near native fluency. Very confident. No hesitation or errors

8 - Excellent. Large vocabulary and varied grammatical forms. Holds eye contact

7 - Very good. No hesitation. Uses eye contact. Varied gestures used.

6 - Good. Clear pronunciation. Expands on topic. No silences.

5 - Fair. Explains with the vocabulary they have, manages to communicate

4 - Limited. Some silences, little eye contact. Basic Grammar only

3 - poor. Long silences. Simple grammar mistakes. Struggles when listening

2 - very poor. Only words, no sentences. Unclear pronunciation.

1 - Non-speaker. Says nothing. could be unconscious.

points for speaker 2 *

9 - near native fluency. Very confident. No hesitation or errors

8 - Excellent. Large vocabulary and varied grammatical forms. Holds eye contact

7 - Very good. No hesitation. Uses eye contact. Varied gestures used.

6 - Good. Clear pronunciation. Expands on topic. No silences.

5 - Fair. Explains with the vocabulary they have, manages to communicate

4 - Limited. Some silences, little eye contact. Basic Grammar only

3 - poor. Long silences. Simple grammar mistakes. Struggles when listening

2 - very poor. Only words, no sentences. Unclear pronunciation.

1 - Non-speaker. Says nothing. could be unconscious.

Who spoke well? Write their name. *

Short answer text

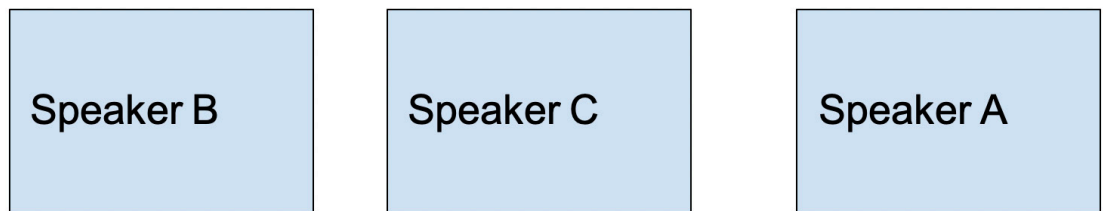
Figure 6

Second-round speaking order



Figure 7

Third-round speaking order



After three rounds, the fourth round starts with speaker A and continues in the same order. While practicing, the students initially had difficulty but later tried to incorporate more technical language in a relaxed way during the conversation.

4. REFLECTIONS

During the speaking activity, the author was able to notice the following.

- Active participation. Student participation was at a greater level, and each speaker gave maximum effort throughout the process.
- Usage of technical words. The students used technical words in their speaking, giving better answers each round. Since the speakers spoke about the same question, each could observe and learn from the previous speaker, enabling the following speaker to provide improved responses and practice technical words in CLIL content-integrated language learning.
- Fluency in improvisation. As learners progressed in the task, their fluency improved, enabling them to make more meaningful sentences. They were able to explain complex technical terms within a fluent conversation.
- The conversation practice built confidence in speaking, and they were more open about making mistakes while speaking. The author noticed that learners enjoyed the process of speaking, students' voices increased as the task proceeded, and they were taking much longer to finish each question as the task progressed. Also, there was less L1 use, and they were able to use technical content during a conversation more effectively.

The students had conversation practice for thirty minutes each class for almost

14 classes giving time for a sufficient quantity of practice. The conversation practice improved their technical speaking ability and motivated students to give their final oral presentations more confidently, which was observed during the final oral presentation. There were some limitations while performing the speaking battle. Few students found participating in the speaking battle challenging, and they still used a lot of their L1 (Japanese) in their conversation.

5. CONCLUSION

Future engineering students must envision their role in the industry. Their ability to communicate internally and externally will determine the success of any organization in communicating accurately and appropriately and will improve one's capacity to deal with people in different roles. In addition, while developing communication skills, the students can apply and build up necessary skills in the long run. Moreover, their spirit to develop their ability and skills to know more about technical aspects of the topics was successfully established.

The main point of this paper is to establish that the CLIL framework of using authentic materials with high-order thinking materials enabled engineering students at a Japanese university to practice and develop technical speaking capabilities. The speaking battle format enabled learners to push away their shyness to engage in more technical English conversations. The speaking practice dramatically reduced the level of apprehension among students, showing that they need motivation and practice to improve and develop their spoken communication skills. The speaking battle format enabled learners to converse and develop technical speaking competencies with CLIL use; it also indirectly helped the students to perform better in their final oral presentations. The author also encourages using CLIL in technical English instruction because of the rich opportunities and positive effects on the classroom and the learner's experience in learning the technical language.

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