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Contents

Editorial

Teachers have many roles, whether they are language teachers or subject teachers (or both), and among them, the most important one could be a *designer*, who consistently makes decisions on *what* should be learned/taught and *how*. In other words, teachers, together with their students, colleagues, parents, educational boards, and other stakeholders, decide whether they accept or reject existing *norms* of learning and teaching to develop a new one in their individual local context (although they may not be fully aware of it).

Assume you find the sentence below in your teaching material; for instance, how do you *design* learning with this text?

(a) To be, or not to be, that is the question. (*Hamlet*, Act III)

A language teacher might draw students' attention to its syntactic form and explain: the first phrase contains two to-infinitive forms, which is left-dislocation. The subject of the main clause "that" refers to the pre-clause slot, which is followed by a *be*-verb (copula) and a noun phrase consisting of an indefinite article and a noun. Another teacher might focus on pragmatic functions. The phrase placed before the main clause functions as *reinforcement* to mark the item as a theme (Quirk et al., 1985, pp.1416-1417, also cited in Carter & McCarthy, 1995). You can see the effect of the thematisation when compared with the sentences below.

(b) To be, or not to be, is the question.
(c) The question is to be, or not to be.

Sentences (b) and (c) are grammatical canon, but they lost the tension, dynamism and elegance of the words, and audience would not feel the agony of Hamlet as they do when hearing the former. Sentence (a) would be incorrect based on the norm of written English grammar, but not spoken one and often observed in the genre of narrative (Carter & McCarthy, 1995).

With the same text, subject specialists might appreciate the content of the play, the writer, the character, and the scene, investigating the historical and socio-cultural context. The other way to explore the text could be to compare several versions and translations of the play. Some might also discuss gender issues with the play, drawing on its film adaptations from Ophelia's point of view or illuminating the fact that women were not allowed to act in theatres at that time, as seen in *Kabuki* plays in Japan. Others might look at it from philosophical, ethical and ontological aspects, exploiting the plots and rhetoric in the play (Wilson, 2018).

How students learn the text is another issue: what teaching materials (e.g., a written text, videos or the physical space of a theatre) should be provided? How tasks should be organised (e.g., a research project or a drama performance), applying CLIL (content and language integrated learning) with 4Cs (content, communication, cognition, and culture/context) (Coyle, 2007) or 4Ts (text, task, talk, and teamwork)(Ikeda et al., 2021)?

In terms of the language medium, learning could be practised with a target language and/or a local language(s) shared between teacher (s) and students (cf. *translanguaging* in Garcia & Li Wei, 2014). During a task, how to attend grammatical "mistakes" is another issue teachers might consider. Should it be corrected based on the norm of "native" speakers or taken as plurilinguals' creative and pragmatic use of language? cf. the notion of ELF (English as a Lingua Franca) (Widdowson, 2003). The choice is yours.

By so doing, teachers collaboratively maintain or change classroom norms at multiple levels. Three stages are involved in the process: *production*, *distribution,* and *consumption* (adapted from Fairclough, 1992). The first concerns content and concepts chosen for learning, the second materials (media) and tasks for learning, and the last classroom practice teachers and students are actually engaged in. Before CLIL emerged, in the Japanese context, at least, many teachers might have refrained from contributing to the first. The "norm" has changed. CLIL provides teachers more freedom to choose, crossing existing domains and different disciplines. It is exciting but could be challenging.

To design learning and teaching, teachers might seek some guidance. The recently published volume, *the Routledge Handbook of Content and Language Integrated Learning*, (Banegas & Zappa-Hollman, 2023) serves well for the purpose (also see *the Handbook of CLIL in Pre-primary Education,* Otto & Cortina-Perez, 2023, if your field is in primary or pre-primary education). So does *Asian CLIL*.

The second volume of *Asian CLIL* showcases two practical reports and three research articles. The first practical report by Abe, Nigo and Cook presents the results and educational implications of a CLIL class using printmaking as the subject matter of an arts and crafts class for lower-grade students and found that their students enjoyed the activity and did not see negative aspects to studying arts and crafts in English. In the second practical report, Kashimoto gives an account of an English language program called 'Templish.' This is a monthly program for elementary school children held at Chokyu-Ji Temple in Nara. In the program, children learn about Japanese tea ceremony, making *mochi* and *nagashi somen* in English. Kashimoto concludes that based on his analysis, that temples have tremendous potential for experiential learning using a CLIL approach.

In reference to the corpus based research on language in CLIL classrooms at Autonomous University of Madrid (Llinares et al., 2012) and the framework of CDFs (cognitive discourse functions) (Dalton-Puffer, 2013), both of which are based on SFL (systemic functional linguistics) (Halliday, 2004), Aiba and Izumi compared lexicogrammatical features in written texts students with different levels of proficiency produced in CLIL lessons at universities in Japan. To help teachers to prepare and implement CLIL effectively in English classrooms in Japan, Odate analysed the potentials and problems of authorised English textbooks in high school. The study showed suggestions how teachers can implement CLIL with these textbooks. The research article written by Shirai investigates the effectiveness of a Soft CLIL approach in Kosen (National Institute of Technology in Japan) by comparing students' self-assessment of learning outcomes with those of students in a private secondary school. The study's novelty lies in its comparative analysis of Soft CLIL's efficacy in two different educational settings, focusing on non-engineering topics. The findings suggest that Soft CLIL can be more effective in Kosen than in private high schools, possibly due to differences in students' assumptions about reading skills and the influence of entrance examinations on their learning. This research provides valuable insights into the feasibility and benefits of implementing Soft CLIL in various educational contexts in Japan.

By reading the articles, readers could relive the experience, the struggle, and the achievement of the authors, which induces reflection on your own teaching. With knowledge, teachers as designers can reflect on their decisions in teaching while evaluating and flexibly adjusting their plans by monitoring students' learning practice and negotiating constraints in a curriculum. Knowing matters, and reflecting is essential to act. *Asian CLIL* is at your service, mediating readers and contributors to the journal.

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A Case Study on CLIL with Art and English in a Japanese Public School to Second Grade Students: An Example of "Printmaking"

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Abstract
This practical report presents the results and educational implications of a CLIL class using printmaking as the subject matter of an arts and crafts class for lower grade students (2nd graders) at a public elementary school in January 2022. The practical study consisted of six hours of teaching, including arts and crafts (four hours total) and a foreign language activity (two hours total). In all units, students watched two videos (about 5 minutes) made by ALTs on the content of the lessons. One was to introduce colors in English while showing paints (less than 2 minutes), and the other was to give an overview of the content of the activities in the unit (about 3 minutes). During the second part of the unit, we conducted a one-hour lesson focusing on how to say colors in English and cultural differences. *Let's Try!*, a Japanese-made English language textbook aimed at third and fourth grade, was used for the second part of the unit. The questionnaire and reflections of the 29 students in the class for analysis showed that all the students enjoyed the activity and did not see negative aspects to studying arts and crafts in English. Furthermore, in a performance test using the language material (What color do you like? I like…), which was designed to connect with *Let's Try! 1* (What color do you like? I like…), 26 students were able to communicate in English showing appropriate retention of the lesson material. This suggests that it is possible to conduct classes that familiarize students with foreign languages while achieving the arts and crafts course goals, even in the lower elementary school grades.

Keywords: CLIL, elementary school, performance assessment, young learners, arts and crafts

1. Introduction
Since 2020, foreign language activities have commenced from the middle grades of elementary schools in Japan, marking a trend toward the early initiation of English language learning. In Japan, where English is a foreign language, many students have limited opportunities to use English outside the classroom. Consequently, Content and Language Integrated Learning (CLIL) has garnered attention as an effective method for foreign language acquisition. However, reports on the practical implementation of CLIL, especially in subjects like arts and crafts, are scarce (see Fujii and Azuma, 2017).

In this practical study, 6 classes total were conducted with second-grade students at a public elementary school in Okayama City. In the school, there were no foreign language activities or lessons for lower-grade elementary students, and during the 2021 academic year, they only had the opportunity for one English lesson with an Assistant Language Teacher (ALT). To deepen the learning from this limited interaction and to foster motivation for English learning in higher grades, we focused on CLIL by integrating foreign languages with other subjects. Therefore, for these students, their first experience of an English lesson in elementary school was through

a CLIL-based approach.

In light of this background, the following two points were emphasized in implementing this practical study:

(1) To create an overarching practice-oriented atmosphere where students were given the time and space to achieve the objectives of other subjects (such as arts and crafts) while learning a foreign language through the use of CLIL.

(2) To develop lesson activities that would motivate students for foreign language activities in the higher grades (from 3rd grade).

2. Theoretical Background and Previous Studies

The most referenced definition of CLIL in Japan is arguably that of Coyle et al. (2010). According to them, CLIL is a "dual-focused educational approach," with its focus being "not only on content" and not only on "language," indicating its diverse nature (p. 1). While CLIL can vary depending on the emphasis placed on content or language, Nigo and Tomioka (2020) propose three models based on examples of CLIL in physical education. Applying these to our teaching practice, arts and crafts CLIL can be categorized into three types: the first type (Figure 1) balances arts and crafts content and language equally at 50% each; the second type (Figure 2) uses arts and crafts lessons as the core, incorporating English around this core; and the third type (Figure 3) centers on English lessons while integrating some elements of arts and crafts. In countries like Italy and Finland, CLIL lessons often follow the first model, while in Japan, there is a tendency to perceive CLIL within the framework of English education. Hence, the third model can be widely observed in Japan. However, our teaching practice was designed according to the second model of arts and crafts core with English on the periphery, which is less explored in Japan.
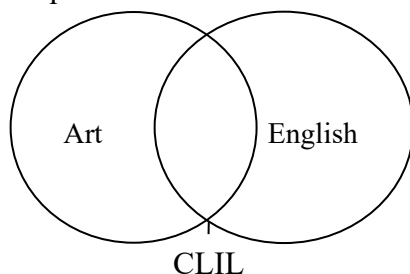
Figure 1. Equal model

CLIL

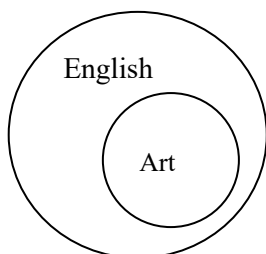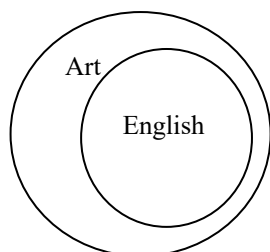Figure 2. Art core - English peripheral model

Figure 3. English core - Art peripheral model

In Japan, the concept of *4Cs* is often highlighted as a key component of CLIL, as noted by Watanabe et al. (2011). These 4Cs stand for Content, Communication, Cognition, and Community. In CLIL lessons, it is crucial to include these 4Cs, meaning that students engage in authentic content from other subjects, enrich their learning through interactions with peers and teachers, deepen their thinking on themes closely related to each specific subject, such as "production area" in social studies and "environment" in science, and conduct these language and cognitive activities through student-led cooperative learning. However, recently, the "Community" aspect is frequently replaced with "Culture", and in this paper, the fourth C is defined as Culture[1].

Another theoretical underpinning of CLIL is its close connection to Gardner's (1993; 2006) Multiple Intelligences (MI) theory. For instance, Dale and Tanner (2012) assert that "good CLIL provides a spectrum of multiple intelligences" (p. 13). According to Dale and Tanner, CLIL learners are diverse in their intelligences, and recognizing these individual differences is crucial when learning other languages. Of Gardner's eight intelligences, bodily-kinesthetic and visual-spatial intelligences are particularly relevant to arts and crafts. This implies that incorporating arts and crafts content can be effective in foreign language learning for students who are adept at using their bodies or visual information. In this sense, utilizing multiple intelligences not only offers opportunities for personalized learning in CLIL but also serves as scaffolding to facilitate understanding of the content.

With this theoretical background of CLIL in mind, the paper next examines prior research and practical examples of CLIL in Japan. Although CLIL began to permeate European countries in the 1990s, it was not until the studies of Watanabe et al. (2011), Sasajima (2011), and Izumi et al. (2012) that CLIL was gradually introduced in Japan. Over the past decade, the number of studies and applications of CLIL has been increasing, but most are at the elementary school level and have included subjects like social studies and science, with few practical subjects. Among these, Yamano (2013) introduced elementary school CLIL that comprehensively utilizes content from arts and crafts, science, and social studies. Current implementations of CLIL can be seen in elementary schools located in Kumamoto and Yamanashi Prefectures in the form of arts and crafts and home economics lessons both incorporating foreign language activities for fifth graders. (Fujii and Azuma, 2017; Ota and Nagase, 2018).

Additionally, Sasajima and Yamano (2019) presented a lesson model for upper elementary grades titled "Let's Make Your Favorite Animal," integrating arts and crafts with color selection and creative activities. Furthermore, Nigo and Tomioka (2020) conducted a practical study for third and fourth graders at an affiliated elementary school in Hiroshima Prefecture, incorporating English into physical education lessons themed around "body-building exercises"

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[1] In this Japanese variant of the CLIL's 4C, the fourth "C" can be interpreted as both "Community" or "Culture."

based on the CLIL 4C framework. In prior research on elementary schools, there is a lack of practical applications of CLIL in hands-on subjects like arts and crafts, and an imbalance in the subjects covered. However, considering the potential to utilize students' individual strengths in intelligence, particularly bodily-kinesthetic and visual-spatial intelligence, and the ease of using these as scaffolding in CLIL to understand subject content through English, there is adequate room for conducting CLIL research on practical subjects such as arts and crafts in elementary schools.

The aim of this is to put CLIL into practice in an elementary school environment and observe its impact on young learners.

3. Unit-Case Study: Arts and Crafts CLIL using the Print "Fill it up" as a Case Study
3.1 Participants
180 second-grade students attending a public elementary school in Okayama City participated in this study. The 180 students were divided into 5 classes.

In this report, we analyze and report on 29 of the 36 students in one of the classes for which we were in charge, who participated in the Main Learning Activities as seen in the 3.3.2 Unit Plan. As previously mentioned, the students in the target grade had not had any foreign language activities or classes since entering school, and this was the first foreign language class for them. In addition, 9 of the 29 students were learning English outside of school, such as at an English conversation school.

For ethical considerations, the school principal's consent was obtained before conducting the practice. Since there are five classes in the same grade at the school, CLIL practice was conducted in the other classes as well to provide equal opportunities for all students.

3.2 Subjects Covered by CLIL
As shown in previous studies, the weight of content and language to be focused on varies within CLIL. In order to make one hour of foreign language learning with ALTs and Team Teaching (TT) more profound, we decided to adopt a model in which other subjects are used as the core and English is partially included in those subjects. Since the schedule of the exchange class with ALTs had already been decided, we selected the appropriate subject for the core of CLIL in this course from the annual teaching plan.

Table 1 shows teaching plans for the grade in the academic year. The five subjects in the table were taught by the classroom teachers, including the author of this study.

After examining the contents of each subject area, we decided to adopt CLIL in arts and crafts because it can be taught with specific movements and because it is easy to visualize the movements in English. In addition, we thought that arts and crafts would be appropriate from the viewpoint of connecting with third and fourth-grade foreign language activities and from the viewpoint of being able to handle the colors used in *Let's Try! 1*[2].

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[2] *Let's Try!* is the official teaching textbook used all over Japan to teach foreign language activities for third and fourth grades.

Table 1. Teaching plans for January in the second grade in 2021 at the cooperating school.

Subject	Content	Outline	Relation to CLIL
Japanese Language	Traditional folktale, *Kasako Jizo* Read aloud Grandma's story	Read the story Notice Japanese phonemes aloud Play *karuta,* card game	Narrative style Phonological structure and pronunciation Cultural differences
Mathematics	Multiplication table Length exceeding 100 cm; m	Learn how the table works. Learn about the unit of length, (m).	Length/Number
Living Environment Studies	Jump to Tomorrow	Reflect on their own growth	None
Physical Education	Enjoy various physical movements	Gesture movements such as flying, running, and splashing	Specific movements; jump, run, hop, etc.
Arts and Crafts	Printmaking with paint	Printmaking with paint	Specific movements; color, cut, stamp, etc.

Note: The Japanese Academic year commences in the month of April and ends the following March. Therefore, the study held in January 2022 is a continuation of the 2021 academic year.

3.3 Unit Objectives and Unit Plan

In order to conduct foreign language activities with arts and crafts as the core subject, objectives and unit plans for both subjects were developed. The objectives and unit plans for the arts and crafts course were developed concerning the Courses of Study[3] as well as teachers' manuals. The unit was planned for a total of six hours: four hours for arts and crafts and two hours for foreign language, which were converted to classroom activities. The two hours of foreign language consisted of one hour of color-focused activities with an ALT and one hour of performance tests.

Unit plans were created for each subject area so that both arts and crafts and foreign languages could be viewed simultaneously. However, since foreign language activities were only a two-hour lessons and did not need to be officially recorded, the evaluation of foreign language was only recorded as a reference[4].

3.3.1 Unit Objectives. Arts and Crafts Department

(1) Through the process of copying by lining up and overlapping the plates, the students will notice the beauty and interest of the shapes and colors of the objects they copy. The students will try various ways of arranging and stacking the plates and experimenting with the positions of the copies.   [Knowledge and Skills (KS)]
(2) Find what you want to express through roller play and stencil prints and think about how to express it.   [Thinking, Judgment, Expression (TJE)]
(3) Be interested in the expression of *katagami* prints and enjoy the activity of representing them on paper.   [Proactive attitude toward learning (PA)]

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[3] Course of Study is Japan's official education guidelines, outlining what is taught in schools from kindergarten to high school. The teacher's manual is usually attached to the textbook to show the alignment with Course of Study.

[4] The result of the performance test was recorded for two reasons: for this research and to motivate students to continue learning English in the future.

Foreign Language
(1) To become aware of the variety of ways of thinking, the differences between Japanese and English in terms of sound and rhythm through foreign words, and to become familiar with ways of saying colors, expressing preferences, and answering whether one likes something or not.   [Knowledge and Skills (KS)]
(2) Communicate their preferences to each other.   [Thinking, Judgment, Expression (TJE)]
(3) Introduce their own preferences while trying to communicate them to the other person.
                                                      [Proactive attitude toward learning (PA)]

3.3.2 Unit Plan (Teaching and Evaluation Plan). The unit plan for the whole lesson is shown in the table below:

Table 2. Unit plan (teaching and evaluation plan).

Unit	Part	Main Learning Activities and Contents	Evaluation Perspectives			Evaluation Criteria and Methods
			KS	TJE	PA	
1	1	Know what to create and have an outlook on the unit Cut out the mold 　　　　[Video 1 & 2]			○	Become interested in *katagami* or pattern paper and express themselves in prints (Reflection and observation of students)
		Learn expressions such as cut and stamp, and colors in English 　　　　[Video 3]	○			Become familiar with foreign language expressions (Performance test later)
2	1 With ALT	Know colors and shapes in English				No evaluation at this time
		Know the differences in the perception of colors and shapes between Japan and other countries Notice the different colors of the rainbow Notice the differences in signage	○			Through foreign words, become aware of the differences between Japanese and English, and become familiar with ways of saying colors, expressing preferences, and asking and answering whether they like something or not (Observation, Worksheet)
3	1 2	Know how to cut *kata* shapes Copy the *kata* by lining them up or overlapping them [Video 4]	○			Try various ways of arranging and stacking the plates, as well as experimenting with the positions in which they copied the images (Students' works and observations)
		Try various ways of arranging and printing the plates		○		Communicate their preferences to each other (Interaction with ALT)

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		Receive the color you want from the ALT in English, "Red, please"				
4	1	Watch a video of the artist creating a work of art by developing an image from a version created by ALT [Video 4]			○	Find what they want to express through printmaking and think about how to express it (students' works and observations)
						No evaluation at this time
		Expand the imagination from the work, color it in with colored pencils	○			
5	1	In front of a set of paints, tell each other about your favorite color "What color do you like?"			○	Interested in the expression of *katagami* or pattern paper prints and enjoy the activity of expressing themselves in prints (Reflection and observation of students)
					○	Communicate their preferences to each other. (Performance Test)

Note: For the description of evaluation, the upper row is for arts and crafts and the lower row is for foreign language activities.

3.3.3 CLIL's Relationship to the 4Cs. The following 4Cs, which are considered important in CLIL class practice, were taken into consideration in the class unit (Table 3).

Table 3. Relationship to the 4Cs of CLIL in this unit.

Content	The course focused on printmaking in arts and crafts, does not exclusively emphasize language. Instead, it encourages a natural use of English in the context of artistic expression.
Communication	During the arts and crafts lessons, students engaged in foreign language communication by using English to request the paints they wanted from the ALT. Furthermore, at the end of the art class, a language activity was incorporated. Students used expressions like "What color do you like?" and "I like…."
Cognition	To foster the development of critical thinking skills, we referred to the *Course of Study for Arts and Crafts* and *Zuga Kousaku 1 and 2 Teaching Manual* (2020) published by Kairyudo. Specifically, we aimed to cultivate thinking skills through the process of deciding how to layer the prints created by the students and what colors to use. The objective was to encourage students to bring their artwork closer to their own vision by experimenting with different colors and layering techniques. This process of thought aligns with the 'Create' level in Bloom's Taxonomy, as it involves generating new ideas, products, or ways of viewing things.
Culture	By watching videos of an ALT creating artwork, students are encouraged to focus on the differences in how shapes and colors of

objects are perceived. This activity aims to cultivate a broad acceptance of diversity, not only through the works of people who have physically spent time abroad but also through noticing the differences in the works of friends who have spent time in the same place.

Furthermore, as an activity focusing on cross-cultural understanding of colors and shapes, we conducted an exercise using signs and rainbows as subjects in the second part. This activity explored the differences in color perception. Students learned that the shape of signs and the perception of rainbow colors can vary from country to country, thereby experiencing the diverse ways familiar objects can be perceived.

3.4 Creation of Teaching Materials

For this unit, in addition to the four videos (an example is seen in Figure 4 and descriptions of all videos are in Table 4), a worksheet (Figure 5) and presentations focusing on color and cross-cultural understanding, which will be covered in the second unit, were created in cooperation with ALTs and grade-level teachers.

Figure 4. Image of video.

Figure 5. The worksheet for the second unit.

Table 4. Video overview.

Type	Summary	Main English	Situations
Video 1	Pen the shape.	draw, pen	primary
Video 2	Cut the shape with scissors.	scissors, cut	primary
Video 3	Introduce various colors of paints.	red, blue,	Hourly and *obi* activities[5]
Video 4	Combine the shape and color (paint) to complete the work.	plane, train	Tertiary and Quaternary

*Train refers to the movement of rolling the ink roller away from you, while *plane* refers to lifting the roller away from the paper.

The videos were created in English only and ranged in length from 30 seconds to 1 minute. The videos were viewed every hour at the beginning of class to get an overview of the activities and to familiarize the students with color expressions in English. Although we did not ask the students to repeat the video, they spontaneously repeated what the ALT had said.

In addition, we told them to imagine the movement of "train and plane" when they print, so that the pattern would not stick to the roller. During the actual printmaking, some students mumbled "train, plane" as they worked.

Figure 6. Slides Used in Second Unit.

In the second unit, ALTs and TTs conducted activities focusing on foreign languages, according to a textbook, *Let's try! 1*, Unit 4 "I like Blue", using the slide seen in Figure 6. In addition, in order to provide an opportunity for cross-cultural understanding, which corresponds to Culture in CLIL, we used traffic signs and rainbows, which are sometimes perceived and displayed differently in Japan than in other countries, as the subject materials.

4. Results
4.1 Methods
To verify the results of the unit, three surveys were conducted: a questionnaire for the students, an analysis of the free description that served as a reflection, and a performance test. A four-point Likert scale questionnaire was administered via Google Forms as a way to assess students' reactions and attitudes toward the unit. The free description analysis was a paper-based free writing exercise administered before the questionnaire and after the second unit (see 3.3.2 Unit plan). Lastly, the performance test was administered during unit 5 and was done as a face-to-

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[5] *Obi* activity is the term used in Japanese education settings, which means activities in the same time slot.

face peer interaction between the students and teacher.

4.2 Survey Results
Based on the work of Nigo and Tomioka (2020) a four-point Likert scale questionnaire was administered after the completion of the entire unit and given to students. There were eleven statements that addressed the four axes of CLIL: "Content," "Communication (listening, speaking, and reading)," "Cognition", and "Culture", as well as the effects of both the English and arts and crafts aspects. Students were asked to respond to the statements by selecting 'Strongly Agree' (SA), 'Agree' (A), 'Slightly Disagree' (SD) and 'Disagree' (D).

Table 5. Survey results (N = 29).

Question Type	Question	SA	A	SD	D
Attitude	1. Did you enjoy the arts and crafts class?	23	5	0	1
Listening	2. Did you understand the ALT's English?	15	11	3	0
Listening	3. Did you understand the English your friends spoke?	19	6	2	2
Speaking	4. Were you able to speak in English during class?	17	8	2	2
4C: Communication	5. Did you understand how to say the colors and shapes in English?	27	1	1	0
4C: Content	6. Did you understand how to make a *kata,* form in English, and create a *hanga*?	28	1	0	0
4C: Cognition	7. Were you able to create a composition with creative use of color and layering?	21	4	3	1
4C: Culture	8. Did you notice that the color of the rainbow and the shape of the road sign are different in Japan and other countries?	19	7	2	1
Attitude: Foreign Language	9. Did this lesson help you learn English?	24	3	0	2
Attitude: Arts and Crafts	10. Did this lesson help you with arts and crafts?	24	4	1	0
Attitude: CLIL	11. Would you like to use English in your arts and crafts class?	22	4	2	1

The results of the questionnaire are summarized in Table 5. All of the questions received many positive responses, and the actual classroom situation showed that the students enjoyed the activities. For reference, a bar graph of all the responses is shown in Figure 7 below.

Table 6. Descriptive statistics of survey results (N = 29)

	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11
Av	3.72	3.41	3.45	3.38	3.90	3.97	3.55	3.48	3.69	3.79	3.59
SD	0.65	0.68	0.91	0.90	0.41	0.19	0.83	0.87	0.81	0.49	0.87
Min	1.00	2.00	1.00	1.00	2.00	3.00	1.00	1.00	1.00	2.00	1.00
Max	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00

In the descriptive statistics (Table 6), the mean values were all above 3.0, and the standard deviation was less than 1.0, indicating that there were many positive responses to the CLIL classes as a whole.

In response to questions such as "Did you understand the ALT's English?" and "Were you able to speak English during class?", a majority of the responses leaned towards "Agree", though it was evident from the data that affirmative answers ("Strongly Agree" and "Agree") were predominant. In lessons focusing on colors and cultural differences conducted with the ALT, only English was used. It is speculated that the decrease in the number of students choosing "Strongly Agree" might be because the communication was not limited to concrete items like in a video. Furthermore, in this unit, there were not many instances where the students were required to speak in English.

Figure 7. Results of the four-scale questionnaire.
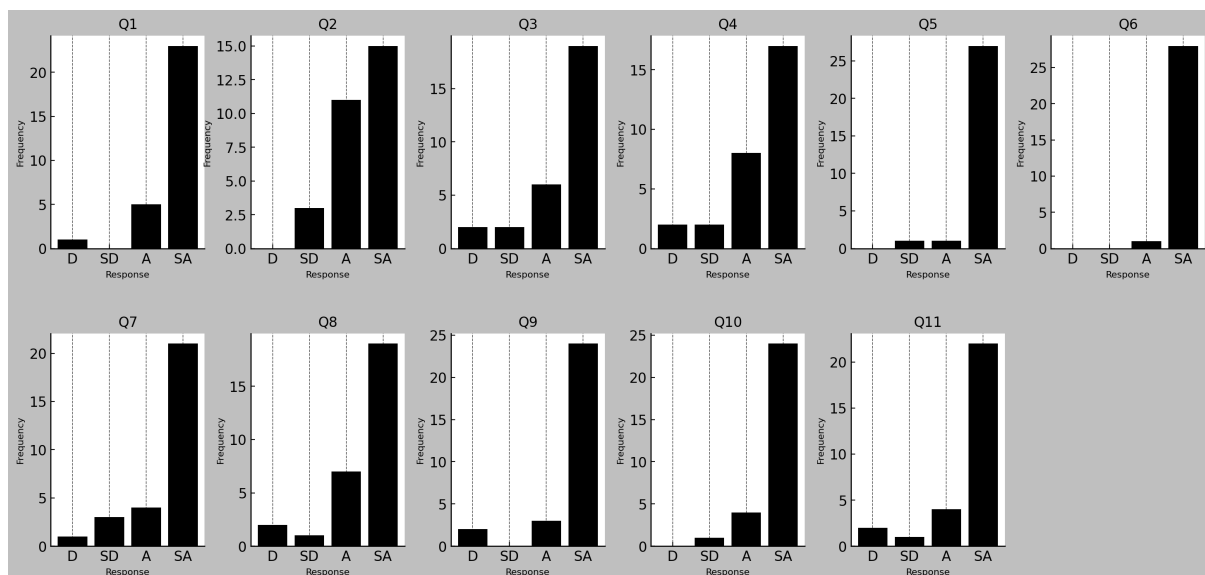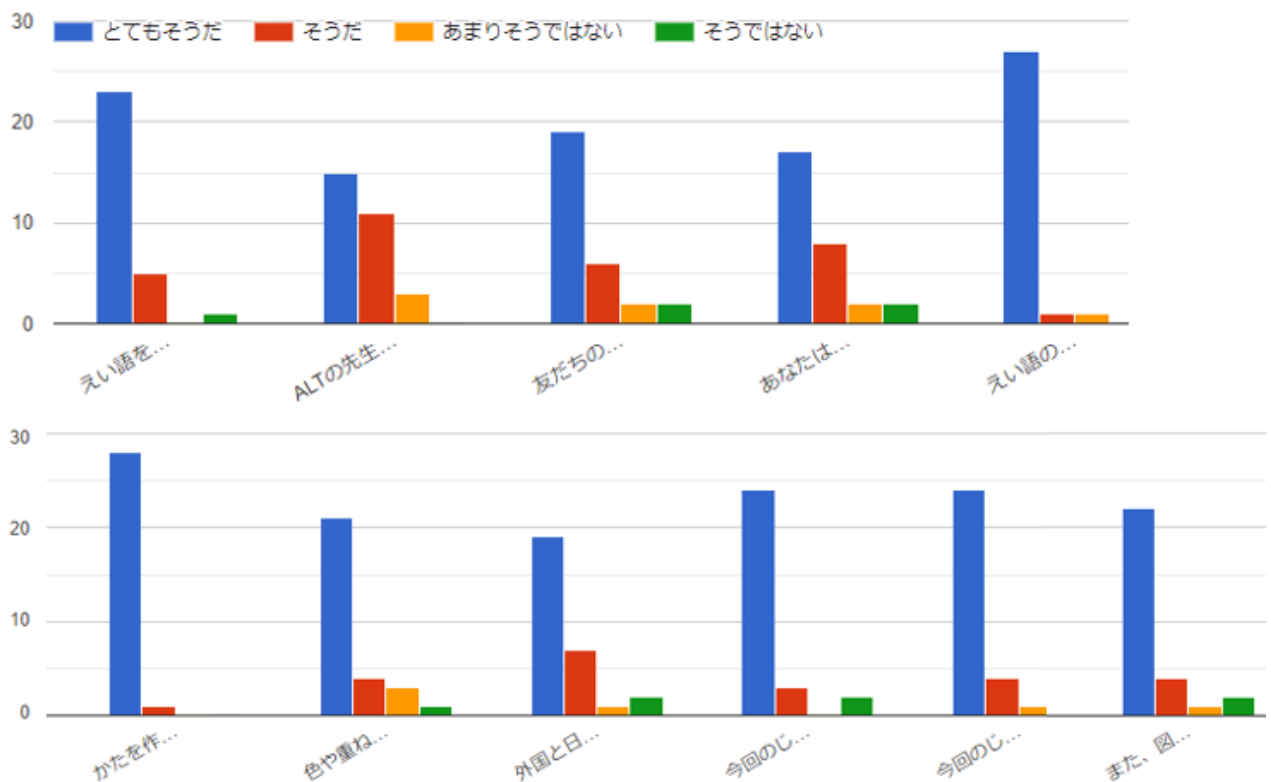
For the question, "Did you understand how to say the colors and shapes in English?" all but one student answered affirmatively. For the question "Did you understand how to make a shape to make a *hanga*?" all students answered affirmatively. For the question "Did you understand how to make a *hanga* by making a shape?" all students answered affirmatively indicating students understood the instructions given to them in English.

4.3 Contents of Free Description of Students
In the second class in which the ALT and the teacher had a TT session, a free description section was included as a wrap-up activity. The free description section allowed students to freely express their thoughts and experiences regarding the lesson in their native language as a way to assess their overall experience. In the descriptions, 23 students wrote that they enjoyed the activity, 5 students wrote about other linguistic contents such as the difference in pronunciation and their awareness of different cultures; contents that were not the main focus of the unit were still touched upon (Table 7).

Table 7. Summary of students' post-class reflections.

Enjoyed learning English, activities, and working with ALTs (23)
-I enjoyed speaking English. (6)
-I want to study English again. (3)
-The quiz and bingo were fun. (10)
-I enjoyed my first class with an ALT teacher. I would like to study with her again. (3)
-I realized that English is important.
How to say colors in English (5)
-I could remember how to say the color in English. (2)
-I'm glad to know that I could learn English, because I usually do not learn colors in English in arts and crafts. (1)
-I enjoyed the class because I was able to say more and more colors in English. (1)
-I found out that "papuru" in Japanese comes from the English "purple". (1)
Cultural differences between Japan and other countries (3)
-The colors of the rainbow are completely different in Japanese and English. (1)
-I found out that the number of colors of the rainbow differs between Japan and other countries. (1)
-It was nice to study the colors of the English language using the rainbow. (1)

Note: This is a summary of the free writing of 29 students. Numbers in ( ) indicate the number of students.

4.4 Performance Test Results
The performance test was given to the students in the form of a practice test to assess their readiness for the third grade. The practice test was given in English, and for all of the students, this was their first time responding in English.

The flow of the 45-minute class is as follows (Table 8);

Table 8. Performance test flow.

1.	Show *Let's Try! 1*, Unit 4 "I like Blue."
2.	Re-watch the ALT video.
3.	Show the rubric for the performance test. The model conversation: Q. What color do you like? – A. I like XXX.
4.	Take a performance test. (in the hallway)

The only question the students were asked was "What color do you like?" to which they were asked to reply, "I like XXX". Some of the students greeted each other with "Hello" on their own accord.

The rubric below was also presented during the performance test (Table 9). Although this was the first time many of the students had seen a foreign language rubric, they understood the contents as it followed a similar pattern to the rubric presented in their other classes at school. The rubric was created based on the assumption that "English" corresponds to knowledge and skills "Interaction" corresponds to thinking, judgment, and expression.

Table 9. Rubric.

Self-Evaluation	English (language)	Interaction
◎(A)	Sentence Level	Tell us your favorite color with a good attitude.
○(B)	Word level	Tell us your favorite color.
△ (C)	No speaking (pointing his finger)	Unable to tell favorite color.

Note: Presented to the students. However, ABC is not presented to students.

The results of the performance test showed that all students received a B or better on the interaction. In English, 14 students were able to respond at the sentence level, while 12 responded at the word level. Three students responded by pointing. Some students were able to respond with English sentences even though they had not studied English outside of school, and all were able to tell what their favorite color was in the form of pointing to the paint in front of them (an example is seen in Figure 8).

Figure 8. Performance test.

5. Discussion
In addition to the two perspectives presented at the beginning of this unit, we would like to discuss the limitations of this study about (or concerning) the 4Cs of CLIL.
5.1 Were you able to achieve your goals in arts and crafts and learn a foreign language?

As shown in the questionnaire, all the students answered positively to the question, "Did you understand how to make a "*kata*" and create a "*hanga*"?" As indicated by the positive responses to this question, there was no negative impact of the CLIL practice methodology on the activities of the arts and crafts class. Although it is a single case study, the insights were shared with all other teachers who conducted the same lesson during the same year, which can be presented in different studies. In fact, when we looked at the students' activities and the work they created, they were able to enjoy arts and crafts as they normally do, and each enjoyed creating their own works of art. Furthermore, when using paints, many of the students used English, saying things like "I want red".

In addition, when we shared with teachers in other classes who had implemented the same CLIL practices, we did not find a lack of understanding from the students. Considering those teachers are not specialized in English teaching, there should be room to implement CLIL practice in more elementary schools in Japan, where a single classroom teacher is in charge of teaching multiple subjects.

From the above points, it can be considered that in this unit the goals of the arts and crafts course were achieved, and in addition, foreign language learning activities were conducted.

5.2 Did it Motivate Students to Engage in Foreign Language Activities in the Middle Grades and Beyond?
Looking at the students' free description, many of them (23 students) wrote that they enjoyed the activities, and 3 students wrote that they wanted to study with the ALTs again. After the performance test, some of the students felt confident that they had learned the content of the third grade ahead of the third grade and came to us to tell us that they wanted to learn more foreign languages. In the results of the questionnaire, 27 students answered that this CLIL program was good for their English study.

In terms of foreign language skills, all the students were able to tell what color they liked in response to the question "What color do you like?" 26 students responded in English, which is thought to have provided an impetus for learning a foreign language in the third grade.

5.3 What Limitations Emerged about the 4Cs of CLIL?
In the foreign language-focused lessons conducted with ALTs and TTs, some issues were found in terms of cross-cultural understanding, which was assumed to be the fourth of the 4Cs of CLIL. One of the most significant issues was an activity in which the number of colors in the rainbow was shown to be different in some countries than in Japan. Although the activity was set up with the idea that there is "fun" in the fact that the number of colors in a rainbow is considered to be five or six in other countries, as opposed to the seven colors commonly used in Japan, the second graders did not feel that there was much difference, and seemed to have the impression that there were "many colors" or "about the same number of colors".

If the cross-cultural materials could be set up in consideration of the students' developmental stage, the activities would have been more exciting, and the students' understanding would have been deeper.

6. Summary and Future Prospects
Through this course unit, we believe that it is possible to implement CLIL in public elementary schools, even in the lower grades (2nd grade), if the subject matter is carefully selected. When implementing CLIL, it is preferable that the subject matter includes concrete items such as toys

and school materials. that students can enjoy while learning through hands-on experience.

The subject matter dealing with cultural differences in CLIL should be something that attracts interest, and in the lower grades, it is considered more likely to attract students' interest if the differences are large enough that they can be seen and experienced with their own eyes.

Through this unit, we could see that the students got more excited about the foreign language activities from the 3rd grade. It will be interesting to see how much they remember the colors in English when they actually learn them in *Let's Try!* In addition, although we do not officially evaluate students' English in this unit, under authentic CLIL practice, both subjects (Arts and Crafts and English) should be assessed. Thus, there is still room to discuss how two subjects should be evaluated in one class. In order to further enhance the practice of CLIL in the future, it is believed that more research needs to be accumulated, such as by referring to practices in other countries.

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Templish: The possibilities of Temples to teach Japanese culture through the CLIL approach

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Abstract
This paper introduces and considers the benefits of using existing resources around us, with an example of the English language program called "Templish". Templish is a monthly program held at Chokyu-Ji Temple in Nara, Japan, which focuses on content and language integrated learning (CLIL) types of activities offered to EFL elementary school children. In this program, the activities fall under the theme of Japanese culture, such as Doing Tea Ceremony, Making Mochi, Doing Nagashi Somen (Noodle Water Slide), and so on. The entire program is basically conducted in English, and all lessons include hands-on activities in which students use tools to move their bodies and make things. Japanese language is provided depending on the situation if it is judged necessary based on the level of understanding. The teaching methods in the Templish program have been developed and refined through repeated improvements over the past 10 years. Although this program was not originally designed as a CLIL class, it contains many elements commonly found in CLIL. The purpose of this paper is to introduce the methods and approaches used in Templish and find where those methods fit into the CLIL framework. Based on this analysis, I propose the potential of temples as a place for experiential learning using a CLIL approach, where students learn about Japanese culture through English.

Keywords: CLIL, curriculum design, Japanese culture, experiential learning, 4Cs

1. Introduction

The Japanese Course of Study (MEXT, 2017) for elementary and secondary education suggests that understanding Japanese traditional culture through foreign language activities is an expected educational outcome. Furthermore, it is recommended to deepen understanding foreign language and culture through experience, and by doing so, students can develop an interest in a language, rather than understanding only knowledge of the language. In the current MEXT-approved textbooks, many of them feature at least one topic of Japanese culture. For example, the textbook Crown Jr. 5 (2019) has a "Welcome to Japan" section, encouraging readers to think about favorite places in Japan and introduce them to other people. New Horizon Elementary English Course 5 (2020) assigns two units (Units 7 and 8) for introducing weather in Japan and Japanese traditional culture and describing it to their English teacher in the form of a guidebook or speech.

However, these textbook activities still tend to be limited to investigative learning. In the elementary school curriculum, in many cases it is difficult to implement classes that focus on an "experience" due to several reasons. First, activities that involve hands-on experience generally take time, so it may be difficult to incorporate them into school education due to curriculum constraints. Another reason is that schools lack props and other material resources. Doing an experiential cultural activity as a class often requires a certain amount of space and tools, so it is difficult to conduct in a school classroom. There is also an issue of human resource. Depending on the theme of Japanese culture, there are cases when the class needs a guest instructor with expertise in the theme.

Under the circumstances, CLIL (Content and Language Integrated Learning) can become an

effective method of designing a class to learn Japanese culture with experience in English. CLIL is "a dual-focused educational approach in which an additional language is used for the learning and teaching of both content and language" (Coyle et al., 2010, p. 1). When learning the topic of Japanese culture in the deeper level (and introducing it to others), it will be strongly related to one of CLIL's 4C's framework, "Culture", which aims to develop "intercultural understanding and global citizenship" (Coyle et al., 2010, p. 41). Interest in CLIL has been steadily increasing year by year. It has been adapted as a teaching approach in many different academic contexts such as secondary schools and universities in Japan.

Efforts are being made to introduce CLIL classes into elementary schools. Nakata (2021) designed a CLIL class using ICT to introduce Japanese rice cuisine in English, and not only introduced the cuisine but also considered social issues related to rice production and consumption in the world. Kashiwagi and Ito (2020) argue that introducing CLIL into elementary school education should be fun because it is the first time for students to come into contact with English, presenting the class designing suggestions and examples of classes at elementary schools with photos. However, as Yamano (2013) states there are still few practical examples of CLIL in foreign language activities in elementary schools. In particular, there are almost no practical examples yet when it comes to "experiencing" Japanese culture in English (Amishima & Yamashita, 2019).

In this paper, I focus on the program called "Templish". This program primarily introduces Japanese culture in English to elementary school students through hands-on activities that aim to help them gain a deeper understanding of it. The program's immediate objective is to offer opportunities for local children to learn and experience Japanese culture in English at a temple. The broader and long-term goal is to cultivate the ability to proficiently convey knowledge of one's own culture and its unique values to people from other countries.

During the development of the Templish program, I found that these goals and the part of aforementioned philosophy of CLIL overlap in many ways. Since Templish was not originally designed with reference to CLIL, I decided to clarify the similarities and differences as a first step. By doing so, I can identify the shared aspects with CLIL and the Templish program, and conversely identify areas that are lacking and require improvement. In this report, by introducing Templish, I aim to present the role and potential that temples can play as a place for CLIL-style classes to understand Japanese culture in English experientially.

2. Templish Program
Before delving into the main topic, providing an overview of the program is essential. Templish is a monthly volunteer program hosted at Chokyu-Ji Temple, situated in Ikoma city, Nara, Japan. This program allows elementary school students to experience their home country's culture through English. As emphasized by Ito (2018, p. 11), "it is important for children to recognize the importance of culture and the arts in developing pride in their cultural heritage"; a principle that Templish also underscores.

The program's initiation can be traced back to the vision of Chokyu-Ji Temple's chief priest, Yuryo Ikeo. Founded in 1927 and deeply rooted in community service, the temple had a longstanding commitment to the welfare of the local community. In 2012, the current Chief Priest Ikeo aspired to gather local children for English language activities at the temple. In consultation with me, an English teacher, the concept for the Templish program took shape. What initially began as a simple idea to teach English to children gradually transformed into a more comprehensive concept. The program aimed to go beyond language instruction, aspiring

to immerse participants in their own cultural heritage and foster an interest in sharing Japanese culture and its values with others. As our discussions unfolded at the temple, Ikeo and I conceived the idea of "introducing Japanese culture in English" to the children. It was during this collaborative process that we coined the name for the program, "Templish," combining the words "temple" and "English."

Templish's management team comprises of four essential members. Chief Priest Yuryo Ikeo, the program's founder, leads the whole team. I, the author of this paper, stand in front of the students as an instructor during the actual lessons. The remaining two members are dedicated staff who support with various operational tasks. The team regularly discusses and shapes monthly learning themes and lesson details. Additionally, immediately after each monthly lesson, the team holds a meeting to review lessons and identify areas for improvement in the future lesson plans.

The decision to center the program content on Japanese culture was inspired by the recognition that temples themselves serve as genuine "treasure troves" of the richness of Japanese culture. Upon close observation, I realized that the temple was surrounded by carefully designed traditional Japanese gardens that display the splendor of each season. Other small temples and Jizo statues are on the premises, giving it a cultural atmosphere. Also, in contrast to the hustle and bustle of the city, the environment is always quiet. Chokyu-ji Temple in particular is blessed with a rice field within its grounds, giving it a typical Japanese rural landscape.

This unique blend of natural and cultural elements makes this temple an ideal environment to explore and spread Japanese culture to children. The temple has tatami flooring, which can be partitioned into several smaller rooms using sliding doors known as fusuma. This design facilitates the organization of workshops, such as tea ceremonies or calligraphy, allowing for the creation of intimate spaces for small group activities. The fusuma doors can be removed to transform the space into one large hall, suitable for opening and closing sessions for a whole class.

In terms of equipment and tools, temples frequently house a variety of items relevant to these cultural activities in general. Such tools may include brushes, paperweights, tea bowls, whisks, and even a red carpet specifically designated for tea ceremonies. This well-equipped environment within the temple enhances the feasibility and richness of cultural experiences for the participants in the program.

The Templish program changes its activity theme every month. Various themes are offered throughout the year, as shown in Table 1 below. Because there is farmland on the premises, in addition to activities related to Japanese culture, there are also months when the theme is field work, such as planting and harvesting potatoes, depending on the season. This holistic approach allows for a balanced and diverse experience, leading to a well-rounded and enriching learning experience for the program.

Table 1. A model of monthly activity themes in templish

January	February	March	April	May	June
Making *Mochi*	Doing Tea Ceremony	Planting Potatoes	Making Carp Streamers	Hiking Chokyu-Ji Trail	Harvesting Potatoes
July	August	September	October	November	December
Doing *Nagashi Somen* (noodle water slide)	Summer Break	Baking Sweet Potatoes	Doing Marble Dyeing	Doing Calligraphy	Making Kites

Each activity takes approximately 2 hours and the average class size is 20-25 elementary school students, ranging in age from first grade to fifth grade. Additionally, the number of participants is not fixed, as participants are determined based on the order of applications received each month, so the program is open to an unspecified number of elementary school students from a wide range of age groups. Given this variability in participants, the program faces the challenge of devising methods for each session to ensure equal engagement in both content and language learning for everyone. This aspect of the program is both demanding and fulfilling. In the subsequent section, I will contextualize the Templish program within CLIL framework.

3. CLIL Variations in Templish

When the Templish program was initiated in 2013, the team, including myself, was not even aware of CLIL. However, the notion presented by Coyle et al. that CLIL is an "innovative fusion of both language teaching and subject teaching" (2010, p. 1) resonates with a key aspect of the Templish program which is teaching Japanese culture in English. Taking that into consideration, by applying the ideas and lesson designs that have been utilized in the past Templish activities to the CLIL framework, I may be able to observe the aims and effects of each activity more precisely, and it can lead to further improvement of the program. In addition to that, it would clarify what is lacking in the Templish program and the direction the program should take in the future.

To obtain a comprehensive perspective, the initial step involves applying the Templish program to the variations of CLIL as delineated by Watanabe et al. (2011, p.10).

Figure 1. CLIL variation (based on Watanabe et al., 2011, p.10).

SOFT CLIL	Purpose	HARD CLIL
English education		Subject education

LIGHT CLIL	Frequency / Number of Times	HEAVY CLIL
One-off / A few times		Regularly / Many times

PARTIAL CLIL	Ratio	TOTAL CLIL
Part of the class		All of the class

BILINGUAL CLIL	Language Used	MONOLINGUAL CLIL
English and Japanese		English
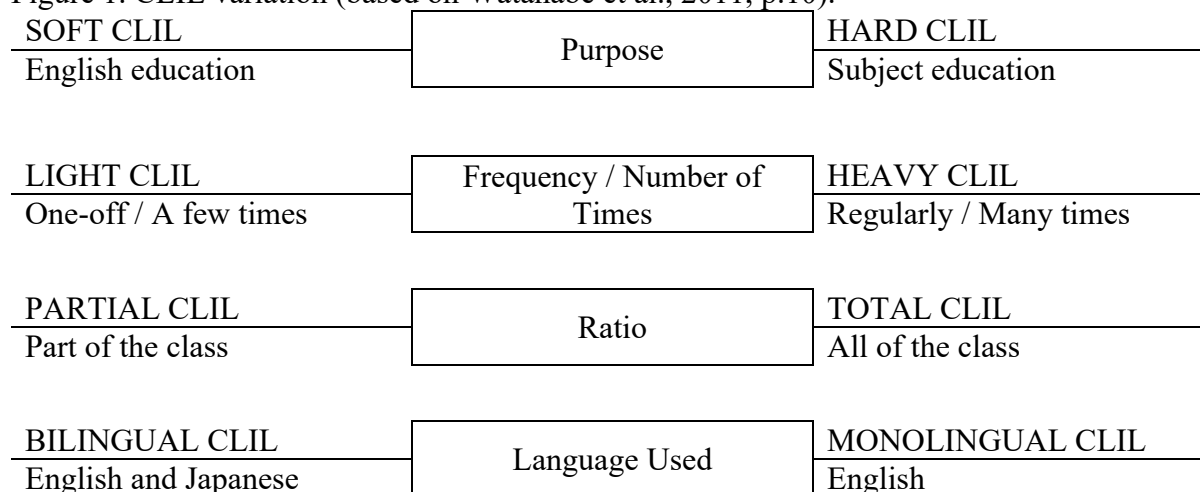
Concerning the first category, "Purpose," the primary objective of Templish predominantly centers on the content of the activity. Although there are instances where flashcards of target vocabulary and actions are employed to illustrate the word order of English sentences, there is no specific emphasis on explaining English grammar. Instead, they are used to memorize words and actions through physical activities. In this regard, Templish aligns more closely with the characteristics of 'hard CLIL'.

Regarding the second category, "Frequency / Number of Times", the Templish program is held "regularly" but not "many times". According to Watanabe and colleagues, low frequency is described as "several times per semester or school year" (2011, p.10) and high frequency as "a full-scale CLIL curriculum" (2010, p.10). In this context, the term "frequency" is not rigidly defined in terms of a specific number of occurrences, which allows more flexible interpretation. Templish is held regularly, but does not meet the criteria for being labeled as a curriculum. Therefore, Templish can be categorized as leaning towards 'light CLIL'. Considering that practical reports on short-term curriculum are still very limited (Omori & Kuroda, 2022), it would be beneficial to introduce activities and ideas employed in Templish as a series of one-time classes.

The third category involves the "Ratio" of CLIL tasks employed in classes, and this dimension holds significant weight in the evaluation and future development planning of the Templish program. Originally not designed based on CLIL principles, any CLIL-like elements in Templish may be considered coincidental. Consequently, it becomes crucial to retrospectively examine these methods through a CLIL perspective, evaluating the effectiveness of past efforts and identifying areas for future enhancement. As will be discussed in a subsequent section, the current Templish program aligns with the characteristics of 'partial CLIL'.

Concerning the fourth category, "Language Used," both Japanese and English are employed in Templish activities. As Izumi (2016) points out, while it is preferable for lessons to be primarily conducted in English, it is also important to be flexible and use Japanese when it is beneficial to facilitate understanding of the students. Templish program follows this approach to using both the L1 and L2 for class activities. As mentioned earlier, in Templish, the grades and age groups of the participating students vary each time, leading to a flexible adjustment of the proportion of English language instruction based on the specific needs of the students. For example, it is often seen in Templish where the teacher says a sentence such as "Do you think matcha is *nigai* ("bitter")?" There are also frequent CS situations where the teacher says a sentence in English, and repeats the same sentence in Japanese as necessary. This type of CS is described as one of the several types of CS (Murahata, 2021). On the other hand, there are times when a student tries to say something in the mix of two languages, such as "I put *chasen* (whisker) next to chawan (bowl)". These kinds of utterances produced by the students whose exposure to English is still limited, is closer to translanguaging (TS). As Sasajima (2020) stated, this is the natural phenomena, and should be taken positively in the class. In such a case, the teacher may model the sentence by saying, "Right, you put the whisker next to the cup." but does not ask the student to rephrase it. It is important to "communicate in English as much as possible even if only partially" (Sasajima et al., 2020, p. 7).

4. Outline of the Lesson
Next, as a specific example of a Templish Tea Ceremony lesson plan is presented below. This tea ceremony themed activity has been employed every year since the start of the program. In other words, it is the lesson plan that has been used most frequently in the Templish program. Therefore, it is reasonable to use this themed lesson plan as an example to illustrate how the

Templish program utilizes a CLIL approach to develop the students' knowledge of Japanese culture and English communication skills. The lesson plan is shown in Table 2 below.

Table 2. Lesson plan for the templish "tea ceremony" themed activity

No	Topic	Content
1	Opening – Attendance Forming Groups Icebreaker Games	Students do simple tasks such as saying "I'm here" and raising their hand when their name is called or using color-coded stickers to find group members.
2	Observation See how the tea master makes tea	Students gather around the tea master and observe the tea ceremony as a model. During the ceremony, the tea master explains the meaning of each process in Japanese.
3	Review Target Vocabulary Learn about a part of the Tea Ceremony	The teacher shows the key vocabulary and phrases for the tea-making process, along with flash cards.
4	Say it out loud and try "making tea"	Practice the process of tea-making several times out loud in English using action cards.
5	Tea Ceremony Card Puzzle	Play a game of sorting action cards in the right order.
6	Closing – Say it out loud with everyone again	Review the learning activity.

The aim of this lesson is to introduce children to the tea ceremony and to help them understand the general meaning of the tea ceremony and its part of etiquette by practicing a process of making tea. However, it is not practical to understand the entire concept of tea ceremony and acquire the processes in a single, two-hour lesson. Therefore, Templish employ different strategies to have children enjoy the tea ceremony in English, within a limited time.

5. 4Cs of the Lesson
5.1 Content
In this section, I aim to analyze the lesson from the perspective of the 4Cs of CLIL. In terms of "content," Ito (2018) emphasizes that "learning about and experiencing traditional culture and crafts is effective for both elementary and junior high school students" (p. 118), and the Templish lesson naturally aligns with a similar principle. Since Templish lessons are designed for elementary school students, the lesson focuses on developing learners' appreciation and basic understanding of the tea ceremony through experiential activities, rather than focusing on different tea ceremony schools or other complex information. Consequently, at the beginning of the class, I provide an overview of the origins of the tea ceremony and then explore key principles of the ceremony, such as "being considerate to others" and "taking good care of things." For instance, children learn the reason behind rotating the tea cup during the tea-making process (to show the most beautiful part of the cup to the guest) through hands-on experiential learning.

To encourage students to speak the target language, a wide range of action cards are used as aids to assist children in remembering and verbalizing target vocabulary with actions in the Templish lesson. The activities using those cards are designed based on TPR (Total Physical Response) approach. TPR is the teaching method developed by the American psychologist James Asher (1965), which includes various physical activities, mainly commands, with plenty of listening and understanding. It also focuses on making learning enjoyable and engaging. Butler Goto (2015) mentions the importance of providing quality input as much as possible in ways that interest children. In Templish, action cards with drawings and the Shoji Board are used to attract children's interest. Shoji is a sliding door with white paper on a lattice frame, used in traditional Japanese architecture. The advantage of using shoji as a board is that there is no need for a large whiteboard in the room because you are simply using the existing door. The teacher positions these cards on a shoji grid, prompting children to be mindful of word order, and encourages them to articulate the words sequentially while pointing to the cards one by one. Initially, both the teacher and children pronounce the words together. Each card has a drawing of an action that corresponds to the content, and the teacher and the students perform the action while saying the word. After a few repetitions, the teacher transitions to pointing to the cards (without pronouncing words) while the children independently say the corresponding words with actions such as "pick up the cup", "look at the design", "rotate the cup", "Whisk the tea in the cup" and so on.

Figure 2. Shoji board and action cards samples

After memorizing the individual actions, the sequence of actions for the tea-making process are presented. On the Shoji Board, the teacher shows the cards in the right order to the students and the students move their bodies while saying the action out loud. As a wrap-up activity there is a game of re-ordering the tea-making process action cards. The teacher randomly scatters action cards on tatami floor and the group of students rearrange them in the correct order as quickly as possible. It will be addressed in the later section.

Figure 3. The sequence of the tea-making process cards and action words

| Whisk the Tea | Take the Cup | Put the Cup on Your Hand | Rotate the Cup | Put the Cup in Front | Bow |
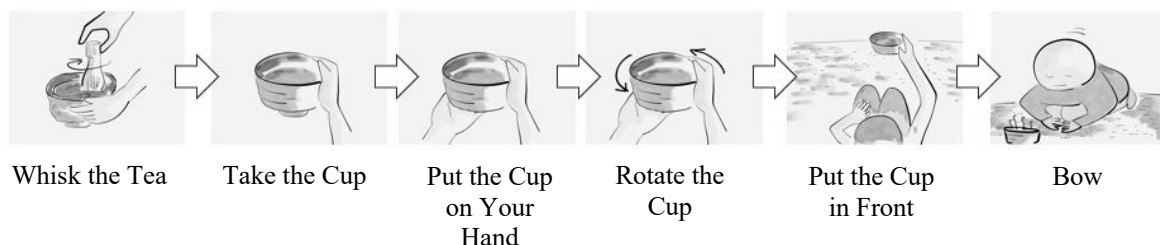
This Shoji Board instruction contributes greatly to students' listening and speaking skills. As Allen Tamai (2010) points out, TPR can reduce the mental burden of learners by moving their bodies and energizes classes with fun activities. Lazar (2017) mentions the positive effect of using TPR in CLIL classes, where learning is facilitated by a sense of success and reduced

anxiety and language learning is more effective when it is fun. What should be emphasized here is that this repetitive, memorizing activity, which resembles drilling, does not have any forced atmosphere for the students, such as "I have to memorize this." The students simply enjoy repeating it. This is similar situation to what Shirai (2017) describes where the students find joy in performing the movements themselves, creating a positive cycle in which they listen because they have fun, and they have fun because they listen. In fact, there have been no students so far who disliked or refused to do this TPR approach activity using the Shoji Board, so this approach is suitable for elementary school students. However, according to Kurokawa (2020), TPR research in Japan is mainly aimed at secondary and high school students.

5.2 Communication

Coyle and colleagues (2010) developed The Language Triptych as a conceptual tool to help educators understand language necessary for a CLIL course. First, language of learning (LoL) is related to understanding the content subject (e.g., tea ceremony). Second, language for learning (LfL) is the functional language allowing one to perform the tasks in the lesson. Finally, language through learning (LtL) is new or incidental language learned through performing the task and arises based on learner needs during the lesson. Table 3 shows examples of this triptych as applied to the tea ceremony lesson.

Table 3. Language types of the lesson in templish

Language of Learning	Key Vocabulary: tea cup, whisker, right, left, hand, hold, put, rotate, clockwise, counter-clockwise, bow
Language for Learning	Asking students to follow the teacher's actions: Can you do this? / Look at me / Hold the cup… / Put the whisker on the floor… / Rotate the cup twice… Instruction to play games: Remember these cards… / Put them in order /
Language through Learning	Words learned accidentally during activities

The entire process of the tea ceremony is very complex and requires a lot of vocabulary, therefore the teacher will only introduce some of them. Specifically, from the whole tea-making process, the part of "making tea and offering it to customers" is extracted. It is very important to learn the minimum vocabulary as LoL that will appear in these manners at the beginning of the class. LfL includes "classroom English" that gives students simple instructions, so sometimes comprehension progresses smoothly when combined with vocabulary learned in LoL. Regarding LtL, sometimes a student with a high level of English proficiency might want to do an activity again and say "one more time!", and a student with a low level of proficiency hears that and starts imitating it. It occasionally occurs in Templish because the program consists students of various age groups and different English levels. As Sasajima (2020) indicates, these three are related to each other, and it may be difficult to distinguish between them, but it is important for instructors to understand this when considering lesson content.

5.3 Cognition

In CLIL, Bloom's Taxonomy, a widely recognized framework is applied in designing the

learning activities: LOTS, which are lower-order thinking skills, and HOTS, which are higher-order thinking skills (Coyle et al. 2010: 30-31, 58) as summarized below.

Table 4. Bloom's taxonomy, (Watanabe, Ikeda, & Izumi, 2011).

HOTS (Higher-order Processing)	Analyzing Evaluating Creating
LOTS (Lower-order Processing)	Remembering Understanding Applying

The simplest example of LOTS in the lesson is the memorization of key vocabulary introduced at the beginning of the lesson. Activities such as the tea ceremony tend to have a relatively larger number of words than other lessons, so it always should be determined whether the workload is appropriate or not, especially because Templish is a gathering of different age groups. The use of flashcards to build vocabulary facilitates the active involvement of younger children. Key vocabulary in this lesson includes nouns such as "tea cup," "whisker," "right," "left," "hand," and verbs like "hold," "put," "rotate," "bow," and so on.

Another example of LOTS is directly linked to the primary objective of this lesson. Throughout the lesson, the children repeatedly observe and engage in the tea-making process. Through these movements, they acquire an understanding of the significance of respecting others and handling tools with care. While the impact of these values may not be immediately observable or measurable in the classroom, they represent fundamental messages that the program aims to impart to the children.

In terms of HOTS (Higher order Thinking Skills), it is difficult to identify particular skills within the lesson. Given the constraints of a one-time, 2-hour lesson, there appears to be limitations in integrating activities equivalent to HOTS. This will be discussed in the later section "Findings".

5.4 Culture
The fourth C, originally referred to as "Community", has been increasingly described as "Culture" in recent years, especially as it envisions interaction with people from diverse backgrounds, as observed in Europe. It may be challenging to replicate such a situation in Japan (Watanabe et al., 2011), Templish has been engaged in a specific initiative for approximately four years. This initiative appears to create a situation that can be labeled as "Culture", so I intentionally use "Culture" instead of "Community" in this context.

Over the past four years, Templish has been inviting volunteer international students from a nearby university to participate in these classes. These students express a desire to engage with local communities while pursuing research in Japan as international students. The exact number of international students participating in each lesson may vary, but since this program started, there has consistently been three to five students participating in the lessons. These students are from various countries, from Southeast Asian countries to European countries. Thus, Templish provides an international environment for the Japanese students, fostering constant interaction with diverse individuals from around the world.

Prior to the lesson, I conduct a meeting with the international students to outline the specific goals of the day's lesson and the roles I anticipate them playing. These roles typically involve

sitting at the reception desk as children arrive at the temple. The international students ask children their names, have the students write their own names on a sticker, and so on. Furthermore, during group activities, each international student is assigned to a group and provides support to children who require assistance and facilitates communication in simple and accessible English. In the tea ceremony lesson, as it was described as No. 5 in Table 2, there is an activity where groups of 4 to 5 children arrange laminated cards depicting the tea-making process in the correct order. International students can help children finish this game, asking questions like "Can you do it?" or "I think this one comes here", and so on.

Figure 4. Re-ordering cards with international students

6. Findings
Up to this point, I have applied the existing Templish programs to the CLIL framework, analyzing both their shared features and distinctions. Through this examination, I have identified certain aspects that Templish currently lacks. This section will concentrate on the most pivotal of these discoveries.

6.1 Cognitive / Thinking Skills
The significance of cognitive and thinking skills in CLIL is evident, and upon reevaluating Templish against the fundamental principles of CLIL, it becomes apparent that the program does not include enough activities specifically designed to cultivate these thinking skills, especially Higherorder Thinking Skills (HOTS).

As mentioned in the preceding section, Templish incorporates various types of LOTS (Lowerorder Thinking Skills) activities. At the program's initiation, core vocabulary is introduced, and participants practice pronunciation with the help of the Shoji Board. Additionally, children will learn actions through using the vocabulary and performing the movement using the action cards. This type of scaffolding has been established based on experience and has achieved certain effects. After the lesson, it is common to observe children spontaneously uttering the words they learned that day with corresponding movements or promptly conveying the acquired vocabulary to their parents during pick-up.

However, even with these positive outcomes, these activities fall within the realm of LOTS among the thinking skills defined in CLIL. A substantial challenge lies in how to evolve these activities into HOTS (Higher order Thinking Skills) activities. There probably remains debate about the feasibility of incorporating HOTS activities into a once-a-month, two-hour program with variable participants, and whether it is necessary at all. As emphasized by Watanabe et al., the flexibility of CLIL, which permits diverse variations based on the class situation, is an inherent characteristic, and "it does not necessarily mean that everything must be realized" (2011, p.9). In the later section, I will introduce ideas for HOTS activities that can be integrated into Templish.

6.2 Evaluation

Given the program premise of Templish, it is not considered necessary to include an academic evaluation. For the target age group (6-to-12-year-olds in elementary school), I focus on eliminating resistance to learning content in English and fostering confidence in verbalizing English. However, Coyle et al. (2010, p. 20) also clearly state the following:

> *"It is necessary to recognise that the confidence-building objective is often difficult to evaluate, other than anecdotally, because it relates to the affective dimension of learning."*

If it is difficult to evaluate the degree of confidence-building, it is important to evaluate the program itself. As Ikeda et al. define several types of evaluation (2010, p.79), partial incorporation of "program evaluation" would be effective. It is important to evaluate the tools used within the program and verify whether the operations are effectively designed. It would also be effective to investigate the children's behavior and speech at home after the program through questionnaires. The aforementioned "confidence-building" anecdotes may also be discovered in those questionnaires..

7. Future Improvements

As emphasized in the earlier section, the primary focus for improvement is on integrating HOTS-related activities into existing lessons. Here are some ideas in this regard. Considering time constraints, the most straightforward approach is to alter the way questions are posed. For example, in addition to the current simple questions used for memorizing vocabulary, such as pointing to a card on the Shoji Board, I can consider introducing questions like the following:

"What do you think a chasen is used for?" or "Why is matcha green?"

Another idea is to enhance interaction with international students. While international students have supported children's group work and participated as game players so far, there have been limited opportunities for children to actively engage with international students. For example, groups could formulate questions related to the theme and pose them to an international student.

Concerning the shift from LOTS to HOTS, Naganuma (2013) proposes that interjecting questions during LOTS activities facilitates a seamless transition to HOTS activities. For instance, while engaging in a task such as rotating a tea bowl, asking the question, "Why do we rotate the bowl?" presents an opportunity to delve into the distinctive Japanese value of "showing the most beautiful part of the bowl to the customer". This approach exemplifies the progression from basic to more complex cognitive processes.

Introducing this kind of new activity allows for the incorporation of both LOTS and HOTS activities throughout the program. When designing a program, consulting the table provided by Watanabe et al. (2011. p. 26) can assist in assessing the overall balance of activities within the program.

Table 5. Matrix for devising CLIL tasks (Watanabe et al., 2011).

	LOTS (Lower order Thinking Skills)			HOTS (Higher order Thinking Skills)		
	Remembering	Understanding	Applying	Analyzing	Evaluating	Creating
Individual	Memorize core vocabulary related to the tea-making process					
Group		Understand the meaning of each movement in the process / Card Sorting Game				Come up with one question about tea ceremonies and ask international students
Class	Practice the tea making process using action cards			Ask thought-provoking questions		

8. Conclusion

In this report, by introducing the Templish program, I examined the purpose of considering whether temples could be a place for CLIL-type lessons to learn English through experiencing Japanese culture, and the following three results were obtained.

(1) There were more similarities than expected between CLIL's educational philosophy and what Templish was independently aiming for. Templish is not a program that only conveys knowledge of grammar and language, but is a program that focuses on "experience". The goals of deepening understanding of Japanese culture through experiences and interacting with international students have many similarities with CLIL's basic philosophy. In addition, there are still few cases of introducing content that deals with Japanese culture with experiences into elementary school education, and there is still room for continued trial and error in the future.

(2) By organizing the information, I was able to confirm the validity of the current teaching methods employed in Templish. This was also very useful for creating future lesson plans. In fact, changes are already seen in the classes after conducting this analysis. Instructors have come to realize that what they have been doing intuitively or with some hesitation is not a mistake, and they are able to use the current teaching method with confidence as it is backed by theory. For example, code switching (or translanguaging) does not have to be taken negatively in CLIL class; rather, they can be taken as a byproduct of efforts to speak.

(3) On the other hand, issues were also discovered. When observing programs from the perspective of 4C's "cognition", many of the activities are centered on LOTS-type activities that remain in the realm of memorization and understanding of meaning, such as vocabulary input through the TPR approach and action cards. There is a room for improvement in the program. The development of these activities into HOTS-type activities can be considered in the future. For instance, the students talk to each other about the taste of matcha, taste preferences, or having students teach some of the tea etiquette and its meaning to international students can be the possible developmental activities.

Using temples as locations for CLIL-style classes that teach Japanese culture experientially has

great potential to create values different from those from English classes in school classrooms. Such initiatives may play a role in supplementing the current situation in elementary school education in Japan, where it is difficult to devote time to experiential learning in foreign languages due to the long-term constraints of completing the curriculum. I aim to actively utilize the insights gained from this study to improve future research and enhance the Templish program.

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CDFs Across Contexts: Analyzing a Learners' Written Corpus for CLIL Classrooms[6]

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Abstract
In the Content and Language Integrated Learning (CLIL) framework, Cognitive Discourse Functions (CDFs) have been proposed as a construct to verbalize cognitive processes in the co-construction of knowledge (Dalton-Puffer, 2013, 2016). Conceptually grounded in both education and linguistics, CDFs are categorized into seven types: *classify*, *define*, *describe*, *explain*, *evaluate*, *explore*, and *report*. The aim of this study is to better understand students' cognitive processes in their writing and clarify how students use the CDFs *explain* and *evaluate* in writing, thereby improving teaching practices and student learning in a Japanese university Soft-CLIL context. The research questions were developed based on the authors' pedagogical and linguistic interests: 1) Does student proficiency affect the use of the CDFs *explain* and *evaluate* in writing? 2) Does the topic influence the use of the CDF *explain* in writing? 3) What lexicogrammatical choices do students make for causal explanation and evaluation? Using the UAM CorpusTool (O'Donnel, 2022), a small learner corpus was created from student writing collected from six classes at two Japanese universities, and the CDFs and Systemic Functional Linguistics (SFL) process types were annotated. The statistical tests of their occurrences revealed: 1) the use of both the CDF *explain* and the CDF *evaluate* differed by proficiency level; 2) the use of CDF *explain* differed by topic when the lesson content was topical; and 3) material process was the most common process type. The results led to unexpected conclusions, such as the tendency of students at higher proficiency levels to make judgments about people, use more reporting verbs, and express causality with conjunctions and subordinate clauses than students at lower proficiency levels. The findings suggest that it may be beneficial for students at lower proficiency levels if instructors provide them with nouns that are indicative of various causes, as well as process verbs, and have them think about the possible effects in classroom activities.

Keywords: CLIL, CDF, learners' written corpus, cognitive process, SFL

1. Introduction
CLIL's integration of content and language has evolved into the *Pluriliteracies* approach to CLIL (Coyle & Meyer, 2021) which, as they point out, fosters deeper learning in two complexly connected domains: One is knowledge building through the internalization and transfer of conceptual knowledge, and the other is the development of subject-specific literacies. What plays a dual role in these two domains are CDFs, as they focus on how academic discourse functions express cognitive processes.

Drawing on an extensive literature review of such functions primarily in European educational

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contexts, the concept of the CDF construct, which consists of seven types, *classify*, *define*, *describe*, *explain*, *evaluate*, *explore*, and *report*, was proposed (Dalton-Puffer, 2013, 2016). CDFs are also rooted in linguistics conceptually, but they do not readily align with smaller cognitive linguistic patterns or larger genres in SFL (Dalton-Puffer, 2013). In other words, CDFs serve as an intermediate-scale bridge between cognitive linguistics patterns and genres. This makes CDFs more relevant to communication in classrooms than other linguistic patterns and genres. The concept of the CDF construct was validated with empirical data that were collected from oral interactions in Austrian secondary CLIL lessons, where subjects like history, physics, biology, as well as business and economics were taught in English. (Dalton-Puffer et al., 2018). Furthermore, CDF-based teaching has spread to other contexts, such as secondary science CLIL in Spain (Gerns, 2023), or history EMI classrooms in the same country (Doiz & Lasagabaster, 2021).

The appropriate scale of CDFs is cited as one reason why CDFs play a central role in the Pluriliteracies approach to CLIL (Meyer & Coyle, 2017). Other reasons include the benefits that CDFs can provide to both teachers and learners when they are used appropriately in classroom activities. Teachers can use CDFs to adjust cognitive patterns as well as linguistic complexity while adapting the conceptual complexity of content. Learners can use CDFs as a tool for initiating specific linguistic function and thus, contribute to knowledge construction. When a CLIL lesson is focused on output, such as speaking and writing, CLIL teachers should pay closer attention to the benefits that students may gain from the use of CDFs.

In the next section, the idea of using CDFs for output, especially for writing, will be supported by reviewing a project in a specific context of how students use CDFs in writing tasks in various subjects.

2. UAM-CLIL Research Group: The TransCLIL Project

A research group conducted extensive research on language and CLIL at the Autonomous University of Madrid in Spain (Llinares & Morton, 2017; Llinares et al., 2012) and developed a new research study (The TransCLIL Project[7]) on bilingual CLIL in primary and secondary schools in the Madrid region, where CDFs intersect with content, language, and literacy (Morton, 2020).

The researchers conducted longitudinal studies in which they followed the same students from grade 6 to grade 8 at state primary and secondary schools. The students were asked on multiple occasions to produce both written and oral texts in the subjects of history, science, and art, which were blog entries and interviews on a radio show. Their analyses focused on the students' defining, categorizing, and evaluating in these subject areas.

The corpus analysis of the CDF *evaluate* was conducted using an analytical scheme of three tiers: affect, judgement, and appreciation. The results showed that appreciation tier was the predominant type of evaluation used by students across all three subjects, while judgment tier was frequently used in history but rarely in art and ecology. These types of evaluation were often followed by justification clauses, indicating that students possess the ability to evaluate information using logic rather than solely relying on their personal feelings (Whittaker & McCabe, 2023). The researchers also employed the SFL transitivity scheme (Halliday & Matthiessen, 2014) to analyze the text. The analysis revealed that nearly half of the verbal

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[7] For further details on the project, please visit the group's website: https://uam-clil.org/projects/.

activities identified as categorization in the students' texts were represented by the relational process (Evnitskaya & Dalton-Puffer, 2023).

As reviewed in this section, the Spanish group's empirical study demonstrated the longitudinal development of students' academic language and the varied use of CDFs. By analyzing students' written and spoken production as a systemic choice activity, the study also illustrated the effective use of CDFs as both pedagogical and research tools. However, only three out of seven CDFs – *define*, *evaluate*, *categorize* – were examined in the corpus-driven study, while the remaining four CDFs – *describe*, *explain*, *explore*, and *report* – were excluded.

3. Aims of the Study and Research Questions
With the objective of analyzing the function of CDFs in students' written production within the specific educational context of the authors, this study adapts the methodology used by the Spanish group to examine the CDFs *evaluate* and *explain*. In fact, the context of the current study, which involves tertiary EFL students in Japan, differs significantly from that of the Spanish group, which concerns a primary and secondary bilingual education context. In the context of this study, teaching practices in mandatory English courses incorporate Soft-CLIL elements (Ikeda et al., 2021). The following is a description of the classroom instruction based on the CLIL 4Cs (Content, Communication, Cognition, and Community/Culture) framework (Coyle et al., 2010).

Students are taught by language teachers in language classrooms, so Communication is a focus of their learning. However, as a dual-focused CLIL lesson, the instruction also maintains a focus on topics as Content. The main Content is based on textbooks, often adapted from news videos and articles, and the rest is from online videos. In some cases, materials are selected with the students' majors in mind. Students participate in numerous pair or group work tasks to develop critical thinking skills, or Cognition, and through these activities, form Communities (See Appendix A for oral discussion tasks).

The teachers, whose native language is Japanese, do not refrain from using Japanese, and incorporate pedagogical translanguaging (Cenoz & Gorter, 2021) as scaffolding to aid English comprehension and foster discussion among students. These descriptions of language classrooms tend to emphasize the differences across contexts or the uniqueness of the Japanese environment. This means that the descriptions somewhat reflect the view that CLIL is a "context for learning a foreign language" rather than an "approach" (Tsuchiya et al., 2023, p.2). What if the side of CLIL as an "approach" rather than a "context" is focused on, implemented in classrooms, and researched? The use of CDFs is part of an attempt to transfer the teaching and research methodology across contexts.

The present study focuses on the student writing as a product of teaching practices in classes conducted by the two authors of this paper who function as teacher-researchers. This approach allows for self-reflection on their everyday teaching practices and the ability to shape new lessons accordingly (Ryan, 2005). Teaching language to students of varying majors and levels of proficiency can be challenging, particularly when using diverse textbooks on different topics. This prompted the authors to develop the first and second research questions. Comparing writing topics could be parallel to the comparison between subjects in the Spanish study. The third question complements the previous inquiries from the perspective of SFL. The topics primarily focus on the field metafunction in SFL, with a profound influence from the unit themes of the textbooks.

Research question 1: Does student proficiency affect the use of the CDFs *explain* and *evaluate* in writing?
Research question 2: Does the topic influence the use of the CDF *explain* in writing?
Research question 3: What lexicogrammatical choices do students make for causal explanation and evaluation?

4. Methods
4.1 Participants and Datasets
This study collected writing data at two public universities in Japan. Two nursing classes at university 1 are at different proficiency levels and others are mixed-proficiency classes (Table 1). Classes in universities 1 and 2 are taught by the authors of this article, teachers 1 and 2. A preliminary study confirmed the feasibility of analyzing student writing with a corpus-driven approach under well-controlled data collection conditions. Datasets 1 and 2 were created from the writing data collected from university 1. Dataset 1 (n=53) contains data from the nursing classes graded by proficiency level, i.e., classes 1 and 2 with average TOEIC IP scores of 338 and 623 respectively. Dataset 2 (n=40) contains data from the mixed-ability classes, i.e., classes 3 and 4, where lower-and higher-proficient students learn together; however, the students in dataset 2 are individually labeled proficiency level "low" and proficiency level "high" (with average TOEIC IP scores of 336 and 560 respectively) for the analysis. Dataset 3 (n=49) was compiled from the writing data collected from university 2. Classes 5 and 6 in dataset 3 were from two departments and were graded in each department. However, their proficiency levels were not considered in the analysis.

Table 1. Participants and datasets

University	Class	n	Proficiency	Dataset
University 1	Class 1	26	Low	Dataset 1
	Class 2	27	High	
	Class 3	20	Mixed	Dataset 2
	Class 4	20	Mixed	
University 2	Class 5	25	Mixed	Dataset 3
	Class 6	24	Mixed	

4.2 Procedures and Data Collection
Data were collected from students using Learning Management Systems (LMS) following classroom sessions throughout semester-long courses. The writing tasks varied depending on the course, but all were intended for the evaluation of students' writing skills at the end of the semester. The writing prompts employed in the present study were created originally for the following three datasets.

Nursing students in dataset 1 were presented with a TED speech on hospital reform (Onie, 2012) during a class session. They were then asked to watch the speech at home and provide both the CDF *explain,* and the CDF *evaluate* responses. The prompt was carefully written to encourage objectivity and logical structuring of their responses.

[Prompt] *Explain the changes the presenter made in the field of healthcare. Why and how did she change the healthcare system? Then, evaluate her activities from your own perspective and support your evaluation with specific reasons and facts from the video. Write 150 words or more.*

Students in dataset 2 studied two units in an ELT textbook (Shishido et al., 2017) and received a concise explanation about cause-and-effect writing in class using supplementary materials. These in-class handouts were compiled from other ELT writing textbooks (e.g. Folse et al., 2015) and the links to EAP online resources (e.g. Smith, 2013) were given as references (See Appendix B for instruction). The topics for both units related to healthcare and aimed to inspire orthopedic therapy and laboratory science majors, respectively. The first unit explored the dieting of fashion models and the effect of plus-size fashion on society, while the second investigated the application of virtual reality in medicine. As a homework assignment, they were instructed to write a paragraph using cause-and-effect writing principles. This procedure was repeated twice for two textbook sections. The prompts were intended to elicit the CDF *explain* responses.

[Prompt] *Explain the effects of plus-size fashion on society. Write a single cause-effect paragraph with 150 words or more.*
[Prompt] *There are many applications of virtual reality in the field of healthcare. Choose a single application and explain what consequences it will have on specific groups of people, including patients and healthcare professionals.*

Students in dataset 3 studied two units from a different ELT textbook (Ward & Gramer, 2019) in class. The textbook provided instructions on how to write a paragraph in English, and the supplementary in-class handouts for cause-and-effect writing used in dataset 2 were delivered to students. Students also learned about a causal chain from online materials that were provided as supplementary exercises for the textbook and were assigned as homework (See Appendix C for the materials). Following each unit, students completed homework assignments that involved writing a paragraph with a topic sentence, supporting sentences, and a concluding sentence, in which they responded to prompts designed to elicit the CDF *explain* responses.

[Prompt] *Why have many companies started online job interviews?*
[Prompt] *What causes manufacturers to develop driverless cars?*

Lexical details for datasets 1, 2, and 3 were recorded, including the segments, tokens, and word count (Table 2). The data were compared across proficiency levels and across topics within the sets rather than between the datasets. This means that the comparison within datasets was the focus of this study, as different instructors in different settings taught the students. Instead, this study analyzed data across proficiency levels and fields within each dataset.

Table 2. Segments and token in datasets

	Dataset 1	Dataset 2	Dataset 3
Number of segments	53	80	96
Tokens in segments	11052	15396	17742
Words in segments	9977	13787	15515

Note. The dataset in question contains the same number of segments as the amount of writing submissions from students. However, two segments that did not adhere to the writing prompts were excluded from dataset 3.

4.3 Analysis through corpus software
Two analytical schemes were developed for the study: one for the CDF *evaluate* and one for the CDF *explain*. The CDF *evaluate* scheme employed in the Spanish research was slightly modified for this study. Following the appraisal theory (Martin, 2000), a new level was added

to each system (Figure 1). The CDF *explain* scheme was created by the authors as there were no pre-existing models that were suitable for the data. Two options were considered: a framework based on scientific writing (Polias, 2011) and one based on historical discourse (Coffin, 2009). The latter was selected because of its better fit with the data and was further refined through data interaction into the final version (Figure 2).

Figure 1. Analytical scheme for the CDF *evaluate* (Adapted from: Whittaker & McCabe, 2023, p.31).

```
                      ┌un/happiness
              ┌affect─┤in/security
              │       ├dis/satisfaction
              │       └dis/inclination
              │             ┌normality
              │             ├capacity
attitude──────┤judgement────┤tenacity
              │             ├veracity
              │             └propriety
              │                 ┌reaction
              └appreciation─────┤composition
                                └valuation
```
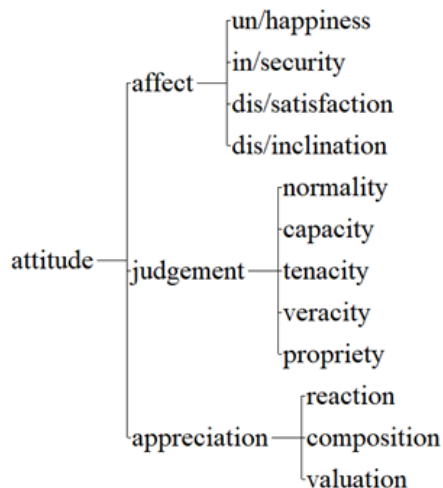
Note. The scheme differs from Whittaker and McCabe (2023) in that the attitude system does not include 'justification' features. Instead, new features at a depth of three (un/happiness, in/security, ...) have been introduced. This is due to the fact that the 'justification' features are taken into account during the analysis of the CDF *explain* as a 'causal conjunction plus dependent clause' (Figure 2.) The system diagram was drawn by using Systemic Network Editor 4.0 (O'Donnell, n.d.)

Figure 2. Analytical scheme for CDF *explain* (Based on Coffin, 2009, p.131).

```
                                                            ┌causal-conjunction-plus-dependent-clause
                          ┌enabling-and-determining-causation┤circumstance-of-cause
                          │                                   ├external-conjunctive-adjunct
                          │                                   └external-causal-process
                          │
causal-semantic-categories┤abstract-causation──nominalization
                          │                                   ┌internal-causal-conjunction
                          │deducing-historical-singnificance──┤internal-causal-conjunctive-adjunct
                          │                                   └interna-causal-process
                          └appraising-causation──appraisal-social-value
```

Note. The systems and features adhere to the table 'Causal categories and key lexicogrammar resources' in Coffin (2009, p.131), except for the inclusion of the new 'internal causal conjunction' feature. This feature is based on deductive reasoning, e.g., *John loved her, because he came back*, (Sweetser, 1990, p.77).

The UAM Corpus Tool 6.2e (O'Donnell, 2022) was utilized to construct a small-scale corpus for learners. This was achieved by importing all the students' texts into three separate projects and then annotating the text using analytical schemes. The same text was manually marked up using two distinct CDF analytical schemes and automatically marked with an SFL transitivity

scheme built into the corpus (Figure 3).

Figure 3. Analytical scheme for SFL transitivity (Built in: O'Donnell, 2022).
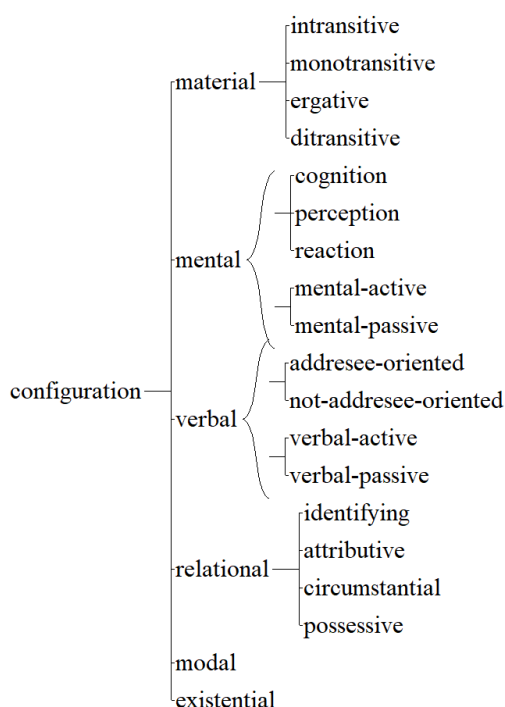
Note. The mental system comprises two simultaneous systems: One is to choose a mental process type ('cognition,' 'perception,' and 'reaction') and the other is to determine voice ('mental-active' and 'mental-passive'). The verbal system also comprises two simultaneous systems: whether oriented to addressee or not and the choice of voice.

The proportions of system choices were statistically analyzed using the Chi-square method with two groups. Table data in the following section display statistical significance denoted by symbols, where "+++" indicates significance at the 98% level, "++" at the 95% level, and "+" at the 90% level ("χ^2": chi-square test statistic; "P": *p*-value; ES: effect size). Systems exhibiting no difference have been excluded due to space limitations. It should be noted that any variation detected by the corpus software was interpreted as indicative of linguistic differences in the use of CDFs. To further understand these variations, the students' sentences were searched within the corpus software.

5. Results
5.1 Comparison across Proficiency Levels
For the first research question, the CDF *evaluate,* and the CDF *explain* schemes (Figures 1 and 2) assist in examining the data. According to the CDF *evaluate* analysis, individuals with lower proficiency tend to be reluctant to make judgments about people (Table 3, ATTITUDE). In dataset 1, individuals with higher proficiency composed:

... she is a person of great activity .... ('judgement' – 'tenacity')
... she sincerely wanted to help families ('judgement' – 'propriety')

Another statistically detected difference involved 'appreciation', or the recognition of something (Table 3, ATTITUDE). In dataset 1, students with lower proficiency were more

prone to providing reactions (Table 3, APPRECIATION), such as:

I thought it was wonderful to reuse the place and time ('appreciation' – 'reaction')

Table 3. Frequency distribution of the CDF *evaluate* across proficiency level in dataset 1

ATTITUDE	Lower		Higher		Comparison			
	N	%	N	%	χ^2	P	Signif	ES
affect	4	8.2	4	9.1	0.02	0.8734		0.033
judgement	0	0	6	13.6	7.14	0.0075	+++	0.756
appreciation	45	91.8	34	77.3	3.85	0.0499	++	0.414
TOTAL:	49	100	44	97.8				
APPRECIATION	Lower		Higher		Comparison			
	N	%	N	%	χ^2	P	Signif	Effect Size
reaction	32	65.3	13	28.9	12.47	0.0004	+++	0.747
composition	1	2	0	0	0.93	0.3353		0.287
valuation	12	24.5	21	46.7	5.06	0.0244	++	0.469
TOTAL:	45	91.8	34	75.6				

Note. The 'appreciation' system is divided into three distinct features ('reaction,' 'composition,' and 'valuation') outlined in the lower table. It is important to note that this paper only presents systems that display statistical differences. The percentages reflect the proportion of segments with the specific feature compared to all segments analyzed using the analytical scheme.

Using the CDF *explain* as an analytical scheme, Dataset 1 indicates that students with a higher level of proficiency tend to use a greater number of 'causal conjunction plus dependent clause' (Table 4). The interpretation of this feature is varied as follows:

Rebecca Onie changed the healthcare system because she had realized the thing that... (cause)
... to connect many patients and their families to the existing landscape. (purpose)
... so that patients can be provided basic resources. (purpose)
... if patients don't eat a satisfactory diet, they will ... (condition)
... by prescribing basic resources. (manner)

Table 4. Frequency distribution of the CDF *explain* across proficiency level in dataset 1

CAUSAL SEMANTIC CATEGORIES	Lower		Higher		Comparison			
	N	%	N	%	χ²	P	Signif	ES
enabling and determining causation	104	72.2	108	80	2.31	0.1286		0.183
abstract causation	14	9.7	7	5.2	2.06	0.1512		0.175
deducing historical significance	21	14.6	19	14.1	0.01	0.9034		0.015
- appraising causation	5	3.5	1	0.7	2.47	0.116		0.203
TOTAL:	144	100	135	100				
ENABLING AND DETERMINING CAUSATION	Lower		Higher		Comparison			
	N	%	N	%	χ²	P	Signif	ES
causal conjunction plus dependent clause	72	50	86	63.7	5.33	0.021	++	0.278
circumstance of cause	6	4.2	2	1.5	1.8	0.1793		0.167
external conjunctive adjunct	15	10.4	12	8.9	0.19	0.6662		0.052
external causal process	11	7.6	8	5.9	0.32	0.5703		0.068
TOTAL:	104	72.2	108	80.0				

The analysis of dataset 2 by the CDF *explain* scheme shows that higher proficiency students use more verbs to express more 'external causal processes.' The causal processes express enabling and determining processes, which are equivalent to necessary and sufficient conditions (Coffin, 2009, p.122). The examples in this dataset include:

... allowing people who were not given the opportunity to work in the past to do so. (enabling)
... this kind of thing will lead to the spread of pulp fashion. (determining)

However, there were a limited number of verbs used to express enabling and determining processes in dataset 2, as listed below:

enabling: *influence*, *aid*, *help*, *enable*, *allow*
determining: *cause*, *lead to*, *force*, *make*, *means that*, *shows that*

Table 5. Frequency distribution of the CDF *explain* across proficiency level in dataset 2

CAUSAL SEMANTIC CATEGORIES	Lower		Higher		Comparison			
	N	%	N	%	χ²	P	Signif	ES
enabling and determining causation	199	62.4	193	68.7	2.62	0.1056		0.133
abstract causation	62	19.4	48	17.1	0.55	0.4571		0.061
deducing historical significance	31	9.7	24	8.5	0.25	0.6181		0.041
appraising causation	27	8.5	16	5.7	1.72	0.1893		0.109
TOTAL:	319	100	281	100				
ENABLING AND DETERMINING CAUSATION	Lower		Higher		Comparison			
	N	%	N	%	χ²	P	Signif	ES
causal conjunction plus dependent clause	65	20.4	58	20.6	0.01	0.9362		0.007
circumstance of cause	37	11.6	30	10.7	0.13	0.7203		0.029
external conjunctive adjunct	30	9.4	21	7.5	0.72	0.3973		0.07
external causal process	67	21	84	29.9	6.27	0.0123	+++	0.205
TOTAL:	199	62.4	193	68.7				

Note. Dataset 2 comprises writing data from students of varying proficiency levels, who are taught in mixed-level classes by the same instructor.

5.2 Comparison across Topics

Research question 2 aims to examine writing topic data. While dataset 2 suggests no variations among topics, dataset 3 presents significant differences (over 98%) in two features (Table 6, ENABLING AND DETERMINING CAUSATION). With the 'circumstance of cause,' containing adverbial groups that convey causal relationships, students who wrote about online interviews utilized this feature more frequently than those who wrote about driverless cars. Examples are:

In recent years, people have avoided contact due to the spread of covid-19 [sic]. (cause)
But in the case of online job interviews, you don't have to get out of the house. (condition).

The external causal process is another statistically detected feature. The students who wrote about driverless cars employed this feature with greater frequency. The number of verbs used to express the process are limited, as noted in the previous section. Two common examples include:

... some restrictions make it difficult to put them into practical use. (determining)
... car accidents are caused by human error. (determining)

Only two verbs were identified that were not included in dataset 1:

Driverless cars <u>enable</u> hands free driving. (enabling)
97% of traffic fatalities <u>are attributed to</u> driver violations. (determining)

To put it more simply, in dataset 3, the topic "online job interview" evoked more 'circumstance of cause' clauses and the topic "self-driving car" evoked more 'external causal process' clauses. This means that whether students used circumstance or process clauses to connect two events of external worlds depended on the events themselves, not on students' inherent tendency to choose one over the other because the same students wrote about these two topics. The example sentences give us a clue to think about this issue. "covid-19" is a circumstance and "accident" is a result of a process. Meanwhile, in dataset 2, the topic "pulp-size fashion" and "virtual reality" did not evoke an external event strong enough to elicit either of circumstance clauses or process clauses. Therefore, the different proportions of circumstance and events across topics are due to the different events of the external words associated with the topics.

Another reason the results differ between datasets 2 and 3 could be due to the selection of topics and the students' majors. In dataset 2, the two topics "pulp-size fashion" and "virtual reality" were loosely related to general healthcare, so students' language could be at the very early stage in the development of the subject language, or English for healthcare. In dataset 3, there was no common ground between the two topics, "online job interview" and "driverless car," so the lesson content and students' language could remain topical. However, this explanation is speculative and should be investigated in further studies.

Table 6. Frequency distribution of the CDF *explain* across topics in dataset 3

CAUSAL SEMANTIC CATEGORIES	Online interview		Driverless car		Comparison			
	N	%	N	%	χ^2	P	Signif	ES
enabling and determining causation	273	68.1	278	65.3	0.74	0.3898		0.060
abstract causation	75	18.7	88	20.7	0.47	0.4802		0.049
deducing historical significance	47	11.7	51	12.0	0.01	0.9111		0.009
appraising causation	6	1.5	9	2.1	0.43	0.5097		0.046
TOTAL:	401	100	426	100				
ENABLING AND DETERMINING CAUSATION	Online interview		Driverless car		Comparison			
	N	%	N	%	χ^2	P	Signif	ES
causal conjunction plus dependent clause	121	30.2	110	25.8	2	0.157		0.098
circumstance of cause	55	13.7	34	8	7.13	0.0076	+++	0.187
external conjunctive adjunct	71	17.7	51	11.9	5.40	0.0201	++	0.163
external causal process	26	6.5	83	19.4	30.36	0	+++	0.398
TOTAL:	273	68.1	278	65.1				

5.3 Comparison using SFL Transitivity Scheme
The built-in SFL transitivity scheme was used to examine differences between proficiency levels and fields for research questions 3. As reviewed in the previous section of this paper, the Spanish data for the CDF *categorize* contains the highest proportion of relational process type, followed by material, existential, and mental process types (Evnitskaya & Dalton-Puffer,

2023). However, datasets 1-3, which commonly included the CDF *explain*, have the highest occurrence of material process types followed by mental or relational process types (Table 7&8).

Overall, there were no statistically detectable differences in process types across proficiency levels. However, at a deeper level, dataset 1 highlights variances in one of the verbal process types expressed by active verbs (Table 7), while dataset 2 does not show any variances. These active verbs include:

... she <u>insists</u> on providing medical care .... (verbal-active)
She <u>stated</u> that she would use the waiting room time as a place to connect patients to resources to stay healthy. (verbal-active)

Table 7. Frequency distribution of process across proficiency level in dataset 1

	Lower		Higher		Comparison			
CONFIGURATION	N	%	N	%	χ^2	P	Signif	ES
material	407	12.5	376	12.2	0.06	0.799		0.006
mental	152	4.7	128	4.2	0.88	0.3495		0.024
verbal	15	0.5	26	0.8	3.7	0.0544	+	0.049
relational	73	2.2	75	2.4	0.3	0.5829		0.014
modal	0	0	0	0	0	1		
existential	14	0.4	7	0.2	1.93	0.1651		0.035
TOTAL:	661	20.2	612	19.9				
	lower		higher		Comparison			
VERBAL 2	N	%	N	%	χ^2	P	Signif	ES
verbal-active	14	0.4	25	0.8	3.85	0.0497	++	0.05
verbal-passive	1	0	1	0	0	0.9649		0.001
TOTAL:	15	0.5	26	0.8				

As for the SFL transitivity across topics, there are quite similar trends between dataset 2 and dataset 3. Dataset 2 indicates that texts related to the plus-size fashion topic include a greater number of 'relational' processes (Table 8, CONFIGURATION), which are typically expressed through the use of the verbs *be* and *have*. The students composed as follows (feature names in the parentheses are shown in Figure 3):

... many fashion models who <u>are</u> too thin ... ('relational' – 'attributive')
... anorexia can <u>be</u> cause [sic] of death. ('relational' – 'identifying')
… being thin means <u>having</u> a good style. ('relational' – 'possessive')

Dataset 2 also includes further 'existential' processes that are conventionally conveyed through the "there + be" structure.

There are many people who are not confident ... ('existential')
However, there is another issue ... ('existential')

The same dataset also displays variations at a deeper level based on the use of 'intransitive' and 'monotransitive' verbs within the material process (Table 8, MATERIAL).

And the number of healthy people will increase ('material' – 'intransitive')
Today, VR is used to support people's health. ('material' – 'monotransitive')

Table 8. Frequency distribution of process across topics in dataset 2

CONFIGURATION	Plus-size fashion		Virtual reality		Comparison			
	N	%	N	%	χ^2	P	Signif	ES
material	484	11.5	484	12.6	2.48	0.115		0.035
mental	115	2.7	92	2.4	0.86	0.353		0.021
verbal	14	0.3	16	0.4	0.39	0.5307		0.014
relational	157	3.7	106	2.8	5.84	0.0156	+++	0.054
modal	0	0	0	0	0	1		
existential	38	0.9	15	0.4	7.99	0.0047	+++	0.065
TOTAL:	808	0.192	713	0.186				

MATERIAL	Plus-size fashion		Virtual reality		Comparison			
	N	%	N	%	χ^2	P	Signif	ES
intransitive	125	3	67	1.7	12.78	0.0003	+++	0.081
monotransitive	296	7	350	9.1	12.09	0.0005	+++	0.078
ergative	56	1.3	54	1.4	0.1	0.7569		0.007
ditransitive	7	0.2	13	0.3	2.43	0.1193		0.035
TOTAL:	484	0.115	484	0.126				

Similarly, dataset 3 displays differences in 'relational' processes at the process type level. The largest factor in this process is the possessive type.

Online job interviews have the great advantage... ('relational' – 'possessive')
We have a lot of opportunities of having online interview… ('relational' – 'possessive')

At a deeper level within the same dataset, variations in the material process are evident in certain features. Notably, a diverse range of monotransitive verbs are utilized.

... driverless cars can avoid such car accidents. ('material' – 'monotransitive')
Automated vehicles have become necessary to solve the labor shortage ('material' – 'monotransitive')

6. Discussion
6.1 Summary of Findings
Regarding research question 1, there are variations in the use of both the CDF *explain* and the CDF *evaluate* among different language proficiency levels. Advanced-level students are more

comfortable with making judgements about individuals and tend to use dependent clauses to demonstrate causality between events. Conversely, novice-level students tend to react more often to the speaker's actions and ideas.

Regarding research question 2, the use of the CDF *explain* varies depending on the topic, or more specifically, the event expressed by a noun or noun phrase that students can easily come up with. For instance, the noun 'COVID-19' is often used with an adverbial group to indicate the circumstance of the cause.

Regarding research question 3, our analysis revealed that the material process was the most commonly occurring process type, in contrast to previous studies. This finding may be attributed to the design of the prompts. Notably, external - physical and social - changes were expressed using transitive material process verbs. For instance, the phrase 'human error' was often accompanied by the material process verb 'cause.' Additionally, advanced students employed reporting verbs more frequently, which relates to verbal process.

6.2 Pedagogical Implications
Each of the points listed above has potential pedagogical implications. However, for the purposes of illustration, consider an example that is related to the CDF *explain* and proficiency levels. Given that teachers may encounter diverse levels of student proficiency in their classes, they must tailor their instruction to meet the needs of their students. When dealing with mixed-level classes, teachers must exercise flexibility and adapt their teaching methods accordingly. For beginner students, teachers may assign tasks focused on easily shareable nouns. A prompt such as "What effects did COVID-19 have on..." with specific action verbs like "cause/change/transform/increase/..." can be provided. At an advanced level, apparent factors may be concealed, allowing students to look deeper into the underlying causes of superficial phenomena. Whenever sources are provided, students can utilize reporting verbs to cite them appropriately.

In this study, writing was assigned at the culmination of each unit, following group or paired discussion as a component of the CLIL 4Cs framework. At this stage, students are urged to focus on the substance of what they intend to write as well as their mode of expression in the target language, in order to encourage better writing habits. Using the translanguaging policy to utilize the mother tongue as a scaffold for learning would effectively integrate Communication and Cognition components of the framework in the target language, enabling further learning. The method of teaching writing, particularly when employing CDFs, is not a separate entity, but rather a combination of all the other factors of CLIL, supported by credible evidence from the classroom.

6.3 Limitations
Two limitations of the corpus analysis are related to the 'interpersonal' metafunction in SFL. The first limitation is that the CDF *evaluate* could benefit from further examination by utilizing the engagement in the appraisal system (Martin, 2000). The engagement is expressed by phrases such as 'I agree' (engagement with another speaker in and out of the text) or the more problematic phrase 'I think' (engagement with readers, for proclaiming or often for hedging). The UAM CorpusTool built-in scheme supports manual coding of the engagement system. The second limitation is that our analytical schema focuses on historical causation, examining past events. However, it's worth noting that causation could include future events as well. The CDF *explore*, in particular, would be interesting to science CLIL teacher communities as it allows exploration, prediction, estimation, or hypothesizing. The corpus built-in the SFL mood system

could automatically identify specific data or even conditionals to complement the analysis of the CDF.

The data collection also had its limitations. Bilingual data collection in the two settings of the current study, as was done by the Spanish group, was beyond the scope of this study. Furthermore, the Soft-CLIL approach employed by language teachers does not prioritize output in the mother language, Japanese. However, the corpus can still be fused for a bilingual analysis comparing output in both languages.

Finally, classroom practices can be enhanced by making better use of CDFs. In the Spanish study, the prompts were longer, more complex, and more situated than in this study. A sample example prompt in a secondary history class (Whittaker & McCabe, 2023) contained 178 words and asked students to mix all of the CDFs in a single blog article directly (e.g., "Define patricians and plebeians") or indirectly (e.g., "What would Europe be like, if the Roman Empire hadn't been so powerful and successful?"). The concrete context was given to the writing task (e.g., "Imagine that you arrive in Ancient Rome...", "Imagine that you can stop at either (A) the Colosseum to watch a gladiator fight..."). In contrast, the prompts in the current study contained at most 45 words and asked students to respond using one or two CDFs. These simplified prompts reflect classroom practices, where students' written production remains a response to individual CDFs; students write only about what they are asked. If CDFs were better used in the lesson planning stage, their attitude toward writing might change.

7. Conclusion
By analyzing CDFs in their learners' corpus, the Spanish UAM-CLIL research group discovered that children's academic language developed differently across subjects in a bilingual CLIL program at a Spanish primary and secondary school. The authors' current study attempted to transfer the Spanish group's methodology into Japanese Soft-CLIL classrooms at two universities in order to better understand students' cognitive processes in their writing and clarify how the CDFs *explain* and *evaluate* are used in students' writing. In fact, the differences in contexts necessitated various minor adjustments to the methodology, including the minimum length set for paragraph writing. Also, the CDF *explain*, which is critical in describing the cause-and-effect relationship between physical and social events, was added to the corpus analysis because this CDF was not covered in the Spanish studies. Another adjustment was that, although the Spanish group studied *subject*-specific language, the authors looked at how *topics* are related to writing. A more fundamental difference is in the positioning of the researchers. This study was conducted by the teachers as researchers, so a pedagogical goal was for the teachers to reflect on and improve their teaching practice and, for students to learn more effectively. This is why one of the three research questions arose from the authors' everyday classroom concerns: dealing with mixed-ability classes.

The corpus analysis of CDFs conducted by the teachers as researchers in this study provides suggestions for writing teachers who teach different levels of students. The results of research questions 1-3 were as follows: 1) the use of both the CDFs *explain* and *evaluate* varied according to proficiency level; 2) the use of CDF *explain* varied according to topic when the lesson content was topical; and 3) material process was the most common process type. A synthesis of the findings for research questions 1-3 yielded the following conclusions which the authors did not expect at the beginning of the research project: (a) higher-proficient students tend to make judgments about people, use more reporting verbs, and express causality with conjunctions and subordinate clauses, whereas lower-proficient students react directly to events; (b) the use of the CDF *explain* depends on writing topics because topics are closely

related to cause and result events, the relationships of which are expressed by material process verbs. The authors' findings have pedagogical implications, one of which is that instructors may assign a cause noun and possible verbs that can be used for material processes to students at lower proficiency level in class and ask them to consider probable outcomes. The findings and their implications are expected to serve bottom-up scaffolding informed by empirical data. This research focused on the use of individual CDFs in traditional paragraph writing. One of the authors' immediate tasks is to have students combine multiple CDFs in a more complex writing task. Another is to develop students' language into subject-specific language by using CDFs in the lesson planning phase. Finally, by incorporating CDF-based tasks, teachers' responsibilities can be extended beyond their own classroom to school- or university-wide syllabus and curriculum design, and overarching approaches.

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Appendix A.
Two oral discussion questions used in class are excerpted below. Both are related to Dataset 2. In class, students were encouraged to express and support their opinions and make a contribution to the discussion started by students 1 and 2 in their own words. A one-page sheet that contains useful phrases for discussion was provided for reference.

1. Do you think the media and the food industry share responsibility for the rise of extreme dieting?
    Student 1: Yes, I believe that the media and the food industry share responsibility for the rise of extreme dieting. The media often portrays thinness as the ideal standard of beauty, and the food industry promotes unhealthy foods that are high in sugar and fat. This can create a confusing and contradictory messages for people, and can lead them to engage in unhealthy behaviors in order to achieve the *ideal* body.

    Student 2: I don't think that the media and the food industry share responsibility for the rise of extreme dieting. People make their own choices about what to eat and how much to eat, and they should be held accountable for their own actions.

2. What are the potential benefits of virtual reality (VR) being used in healthcare?

    Student 1: VR has the potential to revolutionize healthcare in many ways. For example, it can be used to provide patients with more immersive and engaging educational experiences about their conditions and treatments.

    Student 2: VR has the potential to be a valuable tool for healthcare professionals in many ways. For example, it can be used to train surgeons and other medical professionals on new procedures and techniques.

Appendix B
Activities and materials for cause-effect paragraphs are described below. 1-3 are in-class activities and 4 is an excerpt from online materials that students can refer to at home.

In class:
1. The teachers explain key features of cause-effect paragraphs.
reasons (or causes) of an action or event (focus-on-causes method)
results (or effects) of an action or event (focus-on-effects method)

2. Students read a sample paragraph about dropping out of school based on Folse et al. (2021, pp.78-79) and answer post-reading questions on topic sentences, supporting sentences, concluding sentences, and key features of cause-effect paragraphs, such as:
What feature of a cause-effect paragraph do you see in this paragraph?

3. The teachers present connectors and transitions showing cause-effect (False et al., 2015, p.145) and have students underline some of them used in the sample paragraph.

Within a sentence:
because of + noun / because + Subject + Verb / another (cause /effect / reason) / owing to + noun / due to + noun / Subject + Verb, so Subject + Verb / Subject + Verb so (that) Subject + Verb

Between sentences:
As a result / Therefore / Because of this, Subject + Verb

4. Students are given a link to online materials that present more sentences with cause-effect transition signals (Smith, 2013). Some of these sentences are not presented in class:
As a result of the increased use of cars, pollution levels in cities are worsening.
The effect of the increased use of cars is a worsening of pollution levels in cities.
Cars are used increasingly for urban transport. As a consequence, pollution levels in cities are worsening.
Increased use of cars for urban transport adversely affects pollution levels in cities.
Increased use of cars for urban transport is one of the causes of worsening pollution levels in cities.

Appendix C
1. At university 2, students first watch a supplementary video for the textbook. An excerpt from a video script explaining how to identify causal chain is as follows:
"... A time order event represents a sequence of events in the order the events happen, such as what happens first, second, and third, ... In a cause-effect relationship, there is also a sequence of events, but each event is the cause of the next event. ..." (Ward & Gramer, 2019, Online Practice, Unit 1 Critical Thinking video, 2:19-2:56)

2. Students then answer a series of questions that follow the video, one of which is:
Question 6. Which is an example of a cause-effect chain?
( ) When you meet your friend, she asks you how you are. First, tell her that you don't feel that well. Then you ask her if she has any headache medicine. She says that she doesn't. Finally, you tell her that you need to go to the doctor's office.
( ) When you meet your friend, she asks you how you are. You tell her you have a headache, so she asks if she can help. Since she asked if you needed help, you feel a little better because that makes you think your friend is a good person. (Ward & Gramer, 2019, Online Practice, Unit 1 Critical Thinking)

Analyzing Authorized Textbooks: Potentials and Problems to Develop CLIL Lessons in Japanese High Schools

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Abstract
Content and Language Integrated Learning (CLIL) is a teaching approach that aims to enhance learners' content and language knowledge through the integration of content, communication, cognition, and culture (Coyle et al., 2010). There are various studies examining the potentials and practices of CLIL, and its effect has been widely acknowledged. While CLIL is gaining attention in Japan as well (Brown, 2015; Sasajima, 2011; Watanabe et al., 2011; Yamano, 2013), its successful implementation in language classrooms has been a major challenge for teachers. Since English teaching in Japan still tends to focus more on acquiring accurate linguistic knowledge rather than skill improvement or content learning, implementing this new approach in usual English classes can be difficult for teachers although they recognize the positive effect that CLIL can provide. Therefore, this study aims to investigate how to prepare and implement CLIL effectively in English classrooms in Japan. In order to implement CLIL, this study proposes utilizing MEXT authorized textbooks, which teachers in Japan are required to use in conducting their classes in principle. In particular, this study will focus on high school English classes and specifically analyze the potentials and problems of authorized English textbooks with a view to ultimately make suggestions for how CLIL can be conducted in English classes by analyzing six authorized textbooks. Findings from the study revealed that the salient potentials of the textbooks are the frequent occurrence of all language skills, lower-order thinking skills, and global awareness. The salient problems of the textbooks were that grammar is isolated from the content, reading sections lack cooperative learning and tasks to improve students' reading skill, and integration of higher-order thinking skills. It is hoped that this study contributes to the further development of CLIL in Japan so that more in-service and future practitioners will be able to teach quality, yet feasible CLIL, by using the authorized textbooks.

Keywords: CLIL, 4Cs Lesson Framework, authorized textbooks, textbook analysis, material development

1. Introduction

As globalization proceeds, the importance of learning English has become widely recognized in Japan, and the emphasis on acquiring practical English abilities is becoming stronger (Fujimoto-Adamson, 2006). To adapt to the changing social needs, language education in Japan has been going through drastic changes as the revised lower secondary school curriculum was implemented in the academic year 2021, and the revised upper secondary school curriculum was implemented starting in April 2022 (Ministry of Education, Culture, Sports, Science and Technology, or MEXT, 2018). According to MEXT, the revised Course of Study, which are the standards for curriculums in primary and secondary schools in Japan, has placed particular emphasis on laying a foundation to communicate with others while continuing to place importance on acquiring the four skills of reading, listening, writing, and speaking. It has organized the language qualities and abilities while "ensuring that knowledge and skills are acquired," "developing students' abilities to think, make decisions and express themselves" and "cultivating the motivation to learn and humanity" (MEXT, 2019, p. 17). To this end, there is an increasing demand for language teachers to conduct language lessons that foster these skills

effectively.

Due to the implementation of the reform, Content and Language Integrated Learning (CLIL) is getting attention in educational scenes nationwide. Previous studies have shown that CLIL is a promising educational approach that integrates learning content along with a foreign language (e.g., Coyle et al., 2010; Dalton-Puffer, 2008; Ikeda, 2011; Mehisto et al., 2008), and what CLIL can offer and what the new Course of Study aims for overlaps in certain points. Therefore, implementing CLIL can be seen as a way to fulfill the mandates set by MEXT in their new Course of Study.

To implement CLIL and to fulfill the mandates of MEXT, I argue to utilize MEXT textbooks, which primary and secondary teachers in public schools in Japan are required to use in conducting their classes. In particular, the present study examines the potentials and problems of adapting MEXT authorized textbooks as CLIL materials

2. Literature Review
2.1 Authorized Textbooks in Japan
Authorized textbooks are textbooks that are published by MEXT, which the vast majority of in-service teachers are required to use in their classes. They play a central role for teaching language in compliance with the aims of the Course of Study. Retrospectively, there have been many critiques regarding the heavy focus on acquiring language knowledge, which is revealed by previous research on textbook analysis (e.g., Chino & Urabe, 2019; Kawano, 2016; Yasuda, 2021). Yasuda (2021) for example, compared IB (International Baccalaureate) English textbooks used in a course for ESL/EFL students in IB Diploma programs and authorized textbooks for Japanese secondary schools. The study revealed that in the IB textbooks, approximately 50% of the reading tasks require critical thinking or creative thinking, whereas 70% of Japanese textbooks require understanding or remembering language knowledge, and less focus on developing communicative skills. In addition, Chino & Urabe (2019) analysed 39 textbooks for secondary schools to examine the impromptu aspects of speaking activities and found that authorized textbooks do not provide sufficient opportunity to students to speak without preparation.

In relation to teachers who regularly conduct CLIL, only 34.5% of the teachers conducting CLIL in their classes answered that authorized textbooks are appropriate for CLIL materials, and more than 70% of those teachers rely on CLIL textbooks (J-CLIL CLIL Survey Committee, 2022). This indicates that authorized textbooks are not preferred to be used for CLIL lessons, which makes it essential to identify the potentials and problems of authorized textbooks to be used as CLIL materials and to explore how authorized textbooks can be used beneficially in class.

2.2 English Classes in Japanese High Schools
Language teaching has traditionally been based on a teacher-centered approach and making learners consciously aware of language patterns. Teachers devote a great deal of class time to make students gain language knowledge and less time is devoted to critical thinking and creative thinking (Dummett & Hughes, 2019). Especially in terms of reading, teaching method could remain language-focused and teacher-centered, which is known as *yakudoku*, a grammar-translation method that is deeply rooted in English education in Japan (Cook, 2012; Izumi, 2022; Nishino & Watanabe, 2008). Also, although in-service teachers nowadays are becoming to focus more on content, Izumi (2022) points out that how language is taught is by way of "separated" or "disjointed" approach in Japan. That is learning and using is occurring

individually, where learners do not get the opportunity to try using the language when they learn it. However, in order to realize a fruitful language class, integration and connection of language and content are significant, not separation and isolation of learning and using. Mehisto et al. (2008, p. 11) also argues that it is crucial that the students "learn as they use, use as they learn" not "learn first and use later." Yet, it is not easy to shift to meaning-focused, content-rich, balanced teaching, because "the change requires a major shift of thinking from predominantly form-focused, accuracy-oriented teaching that pervades many teachers' minds" (Izumi, 2022, p. 29). Therefore, it is beneficial to carefully explore how CLIL lessons could be promoted in language classrooms in Japanese high schools.

2.3 The 4Cs Framework
CLIL is a dual-focused teaching approach that integrates the 4Cs: content (subject matter), communication (language learning and using), cognition (learning and thinking process), and culture or community (developing intercultural and global citizenship) (Coyle et al., 2010). Ikeda (2016) further refines the principles of 4Cs in eight categories shown in Table 1.

Table 1. The CLIL lesson framework (Ikeda, 2016, p. 17).

Content	Communication	Cognition	Culture
Declarative knowledge	Language knowledge	Lower-order thinking skills (LOTS)	Cooperative learning
Procedural knowledge	Language skills	Higher-order thinking skills (HOTS)	Global awareness

The CLIL Lesson Framework divides each C into two categories. Content is divided into declarative and procedural knowledge of the subject matter. Declarative knowledge refers to the knowledge of facts, principles and concepts. In other words, declarative knowledge is factual knowledge that people can report or describe. Whereas, procedural knowledge involves knowing how to do something or actively engaging in cognitive activities, such as reasoning, decision making, and problem solving. Communication includes language knowledge such as vocabulary, grammar, and expression, and language skills such as listening, reading, speaking, and writing. Cognition is divided into two types: higher order thinking skills (HOTS) and lower order thinking skills (LOTS) (Anderson and Krathwohl, 2001). HOTS include such skills as analyzing, evaluating, and creating, whereas LOTS include skills like remembering, understanding and applying new knowledge. Culture consists of cooperative learning and global awareness. Cooperative learning is where learners are encouraged to work cooperatively through pair and group work, while global awareness is having opportunities to broaden learners' perspectives by dealing with global issues. It is argued that when planning and implementing a CLIL lesson, these elements should be taken into consideration for effective learning for students.

3. Research Question
The present study investigates the following research question:

RQ: How can authorized textbooks in Japanese high schools be used in a way that adheres to CLIL principles? What are their potentials and problems?

The question examines how authorized textbooks can be utilized as a CLIL material. It investigates the potentials and problems that the authorized textbooks have by considering the 4Cs of the CLIL Lesson Framework. Then, the study explores the use of authorized textbooks as CLIL materials in a way that makes the most use of the potentials and overcomes problems found in the research question.

4. Instruments and Methodological Procedure

In order to determine the textbooks to adopt for the study, the most frequent adopted textbook publishers among metropolitan high schools for *English Communication I* were chosen (MEXT, 2021). They are *Big Dipper* (Suken Shuppan), *Crown* (Sanseido), *Element* (Keirinkan), *Flex* (Zoshindo), *Landmark* (Keirinkan), and *Power On* (Tokyo Shoseki).

The research question was examined through two steps to analyse the textbooks quantitatively and qualitatively. First, the researcher classified and counted all the elements that appear in a lesson into the CLIL lesson framework: content, communication, cognition, and culture (Ikeda, 2016). However, only checking the elements quantitatively has its limitations. It is likely to overlook significant tendencies that can be observed such as how 4Cs are integrated, how the lesson flow is constructed, or the quality of questions and tasks provided. Thus, the researcher took a closer look at the textbooks qualitatively in order to identify the potentials and problems specifically. Then, a set of guidelines by which to adapt the textbook is explored and clarified.

5. Data Analysis Procedures

5.1 Content

Content includes declarative knowledge and procedural knowledge. Declarative knowledge was tallied whenever factual knowledge that can be reported or described appeared in the lesson. For example, reading sections, comprehension questions, listening questions, or tasks that introduced or asked to use the facts were each counted as 1 as declarative knowledge. Procedural knowledge was counted when the textbooks presented knowledge that relates to reasoning, decision making, and problem solving. For instance, where the textbooks provided questions or tasks that make students use their knowledge was counted 1 as procedural knowledge.

5.2 Communication

Communication is divided into language knowledge and language skills. Language knowledge includes vocabulary, expression, and grammar. Vocabulary and expression were counted respectively when the textbooks gave a separate list as key words or key expressions for students to use. For example, in all six textbooks, a list of vocabulary and expressions are provided in each reading section. Each list of words and expressions was counted 1 to count how frequent these elements were represented in each section. In the matter of grammar, it was tallied 1 whenever there was a focus on the form represented explicitly. Language skills was marked for each skill when the textbook explicitly gave instructions to listen, read, speak, or write.

5.3 Cognition

To identify LOTS and HOTS in Table 1, the revised version of Bloom's taxonomy was applied (Anderson et al., 2001). LOTS contain remembering, understanding, and applying. Remembering involves bolded vocabulary and expressions or grammar exercises that repeatedly appear. They were tallied 1 for each set of the exercises. Understanding applies to the parts where the textbooks have students interpret the meaning of the presented content. Comprehension questions that help students understand the passage, or exercises and drills

used for practicing the target form are examples of understanding. Whenever these types of questions or exercises and drills appeared in the section, each was tallied as 1. Applying is where students need to select and use previously learned information in a similar situation or a problem. Retelling is one of the examples for applying in which students need to reproduce what they have learned. Also, when students are given an example format and then follow the given format to produce language, this was also regarded as applying and counted as 1.

HOTS include analysing, evaluating, and creating. Analysing occurs when students are required to examine in detail so as to identify causes, key factors, or possible results. For instance, in *Crown* (p. 69), several *dogu* pictures are shown to the students and then students are asked to describe the facial expressions that each *dogu* has. Students need to examine what each picture describes, which makes students use their analysing skill and therefore counted as 1. In terms of evaluating, students make judgments of the quality, importance, or value of given information. Type of questions such as "What can you do if you remember the order of priorities (in life)?" (Flex, p. 37) are examples of evaluating. Lastly, creating applies to tasks that make students think of and create to produce original work such as presentation, speech, essay, or poster.

5.4 Culture
Culture is divided into cooperative learning and global awareness. Cooperative learning in culture includes solo, pair, and group work. Where the textbook explicitly states to work in pairs or in groups was counted for cooperative learning respectively. Solo was also counted to examine how frequent pair and group work appears in the overall lesson flow compared to individual work although individual work is not cooperative indeed. Whenever students were given questions, exercises, or tasks without any instruction to work in pairs or groups, each was counted 1 as solo work.

Global awareness was examined to see if the textbook covers topics that raise global awareness, not only in the lesson, but also throughout the textbook. Whenever a content including graphs, data, pictures, passage, questions that was regarded to raise global awareness was each counted as global awareness. Additionally, in order to examine all the topics in the textbook, the main topics of each lesson were also counted to include the value as a whole textbook.

6. Results
This section presents the key findings of the study to answer the research question: How can authorized textbooks in Japanese high schools be used in a way that adheres to CLIL principles? What are their potentials and problems? To identify the potentials and problems, this section firstly presents how frequent each C appeared in the six textbooks. Then, based on the observation, the most salient potentials and problems are identified.

6.1 4Cs in the Textbooks
     6.1.1 Content. This section explores what contents were tallied in each textbook. Table 2 shows the total number of knowledge items included in each textbook.

Table 2. Frequencies of content tallied in each textbook

	Content	
	Declarative Knowledge	Procedural Knowledge
BIG DIPPER	7	5
CROWN	9	7
ELEMENT	8	4
FLEX	10	3
LANDMARK	10	3
POWER ON	6	5
TOTAL	50	27

In total, declarative knowledge (50) appeared about two times more frequently compared to procedural knowledge (27). However, in some textbooks, both declarative and procedural knowledge were included to a similar degree such as *Power On* (6-declarative : 5-procedural). Declarative knowledge appeared in all sections throughout the lesson in all textbooks, while procedural knowledge appeared in the introduction, comprehension questions that asked for students' opinions, and final tasks.

6.1.2 Communication. This section explores what communications were tallied in each textbook. Table 3 shows the total number counted for language knowledge: vocabulary, expression, and grammar, and language skills: listening, reading, speaking, and writing.

Table 3. Frequencies of communication tallied in each textbook.

	Communication						
	Language Knowledge			Language Skills			
	Vocabulary	Expression	Grammar	Listening	Reading	Speaking	Writing
BIG DIPPER	5	5	4	5	4	5	6
CROWN	5	7	4	7	6	4	8
ELEMENT	4	6	2	4	4	3	1
FLEX	6	7	6	5	7	7	7
LANDMARK	5	6	3	8	6	4	4
POWER ON	5	5	4	4	5	6	5
TOTAL	30	36	23	33	32	29	31

As shown in Table 3, expression (36) was the most frequently counted element, followed by vocabulary (30). Grammar was the least frequent that appeared among language knowledge

(23). Expression frequently appeared throughout the lesson in all sections, while vocabulary and grammar were mainly focused in the reading section.

In relation to language skills, all four skills of listening (33), reading (32), speaking (29), and writing (31) were equally included, although how they were presented in a lesson differed depending on textbooks. For example, some textbooks included all four skills in the reading section, while others focused on the improvement of each skill respectively in different sections.

6.1.3 Cognition. This section explores what cognitions were tallied in each textbook. Table 4 displays the total number of lower-order thinking skills (LOTS), including remembering, understanding, and applying, and higher-order thinking skills (HOTS), including analysing, evaluating, and creating.

Table 4. Frequencies of cognition tallied in each textbook.

	Cognition					
	Lower-Order Thinking Skills (LOTS)			Higher-Order Thinking Skills (HOTS)		
	Remembering	Understanding	Applying	Analysing	Evaluating	Creating
BIG DIPPER	5	7	7	1	2	2
CROWN	6	8	8	5	5	2
ELEMENT	4	7	6	4	3	1
FLEX	7	9	8	1	1	2
LANDMARK	5	11	7	1	2	3
POWER ON	4	5	5	1	3	0
TOTAL	31	47	41	13	16	10

A notable difference was observed in cognition between LOTS and HOTS. LOTS were observed more than double the number of HOTS. This result is consistent with what has been described in other previous studies (Dalton-Puffer, 2007; Dummett & Hughes, 2019; Ikeda, 2016; Izumi, 2016; Kawano, 2016; Tomlinson, 2003).

Among the three skills in LOTS, understanding was the most observed (47). Most sections in a lesson consisted of questions to check students' comprehension, which made understanding appear frequently. The second commonly used skill was applying (41), where students were required to use their content or language knowledge to answer questions, or work on drills, exercises, or tasks. Remembering (31) was the least observed among LOTS. The textbooks did not explicitly state to remember, but important key vocabulary or expressions were indicated in bold type listed separately, which can implicitly indicate that students are expected to remember those items.

The most observed among HOTS was evaluating (16), followed by analysing (13), and creating (10). Questions or tasks that make students use evaluating and analysing skills appear in various sections where students are expected to give opinions on the content, or discuss issues raised in the passage. Creating mainly appeared in the final task to give presentations/speeches, or writing paragraphs/essays.

6.1.4 Culture. This section explores what cultures were tallied in each textbook. Table 5 shows the total number of cooperative learning, which is solo, pair, and group, and global awareness.

Table 5. Frequencies of culture tallied in each textbook.

	Culture			
	Cooperative Learning			Global Awareness
	Solo	Pair	Group	
BIG DIPPER	7	5	0	7
CROWN	9	6	2	9
ELEMENT	7	2	1	8
FLEX	9	1	1	10
LANDMARK	10	1	2	10
POWER ON	5	5	0	6
TOTAL	47	20	6	50

In cooperative learning, solo work was the most observed (47), followed by pair work (20) and group work (6). The overall tendency of cooperative learning was that pair work appeared in the introduction section where students are expected to brainstorm about the topic, and also after the reading sections where tasks are presented. Group work was seen in the final task predominantly. Other than that, there was no instruction that makes students work either in pairs or groups.

6.2 Potential Use of the Textbooks in CLIL Classrooms

6.2.1 Language Skills (Communication). As shown above, all four language skills were relatively equally included in all textbooks. Tasks were designed for students to use all four skills while learning content. What was remarkable is that several skills were integrated in the final task presented at the end of each lesson. One of the examples can be seen in *Landmark* Lesson 4 Eco-Tour on Yakushima (p. 75). First, students are to listen to a conversation about eco-tour (listening). Then, students read a leaflet of eco-tours on Yakushima, and fill in the blanks based on what they heard from the conversation (reading/writing). Lastly, according to the leaflet, students were to discuss in groups about which tour they want to take part in (speaking). As can be seen from this example, textbooks include tasks that give opportunities for students to use various language skills in a lesson.

6.2.2 Lower-Order Thinking Skills (Cognition). Many tasks for cognitive skills that enhance lower-order thinking were included in authorized textbooks. True-or-false questions, multiple-choice questions, description problems, and summarizing by filling in the blanks were common types of questions that appeared as understanding. In addition, a retelling activity was also popular among the textbooks, which was classified as applying. It can be proposed that questions that check students' comprehension are abundantly provided just by using authorized textbooks.

6.2.3 Global Awareness (Culture). As shown in the quantitative results, topics in the textbooks incorporated issues around the world. The tendency could be seen not only within

the textbook, but also within a lesson. For instance, *Element* Lesson 1, students have the opportunity to see the world map and identify the places, match words and pictures from different places around the world, and discuss places they want to visit in the introduction part (p. 16). In Lesson 4, students are expected to discuss possession of nuclear arms by referring to a graph that compares 9 countries which hold nuclear arsenals (p. 63). These examples show that in-service teachers can use the content of the textbook to help raise students' global awareness.

6.3 Problems of the Textbooks

6.3.1 Grammar: Language Knowledge (Communication). The results of language knowledge showed that grammar had the least occurrence among the three. However, the problem is not with the number of forms focused in the lesson. The problem with grammar is that whilst there was a focus on a target form in the reading section, the learning of the form was not integrated with content. One of the examples can be seen in *Flex*, in reading section part 1 of Lesson 4 "Malala: Fighting for Women's Rights" (pp. 61–75). After reading the whole story, students are expected to write and present using the target form, which is the relative pronoun, based on the question below shown in Extract 1.

Extract 1. Example on grammar task (FLEX, p. 71)

> Use the target grammar (such as "who" or "which") to write about your favorite entertainer (TV star, singer, actor, anime character, and so on). Then, give a presentation about him or her in your group.
>
> Sample answer: My favorite singer is Utada Hikaru. She is a singer **who** has written many songs, too. Some of the songs **which** she wrote became big hits around the world. Her songs are usually pop music, but she also uses rock and hip-hop style.

A problem can be raised in learning and teaching grammar in this example. That is, the tasks given to the students do not relate to the content. This tendency could be seen in other textbooks, too. For example, in Lesson 1 "Intercultural Relationships" in *Element,* a grammar task is to use the target form, to-infinitives*,* to answer the question, "Where did you go last weekend? Why did you go there and what did you do? Talk about your last weekend with *to do,"* which also does not relate to the content (p. 22). In *Power On,* explanations of the target form and few exercises are given on the bottom of all reading sections, but still the example sentences are isolated from the content.

As seen in the examples, authorized textbooks seem not to integrate or connect grammar and content. How grammar can be taught with authorized textbooks can be carefully reconsidered. Since CLIL emphasizes the importance of content and language integration, learning grammar in authorized textbooks should be revised so that students can try using the target form to discuss and deepen their understanding of the content.

6.3.2 Reading: Language Skill (Communication). Four language skills are included about the same amount in authorized textbooks; however, the problem lies in reading sections for inadequate instructional guidance or support for learning to read. In all six textbooks, reading sections do not include guideposts that suggest how students can read and improve their reading skill in textbooks. Although textbooks give questions to check students' comprehension or to discuss the content, they are so separate and isolated from the main reading sections that they may not be utilized as much during instruction or reading. This

observation also illustrates one of the reasons why the frequency of cooperative learning is relatively low, since the main part of the lesson lacks tasks other than comprehension questions to understand the content.

6.3.3 Tasks: Higher-Order Thinking Skills (Cognition). All authorized textbooks include tasks at the end of the lesson, which is the section where HOTS frequently appear. The framework of the final task noticeably differs among the textbooks, which makes it difficult to generalize the tendency. However, what needs to be asked is whether the tasks actually stimulate higher-order thinking.

To illustrate, in *Big Dipper*, four steps are provided in the final task. In Step 1, students listen to a passage and fill in the blanks to comprehend the content in Japanese (listening / LOTS: understanding). In Step 2, students work with partners to discuss what they heard in Japanese (HOTS: analyzing, evaluating). In Step 3, students write their opinion in English using the format and glossary provided (writing / LOTS: applying, HOTS: evaluating). Lastly in Step 4, students share opinions with partners (speaking / HOTS: analysing). By going through all these steps, it seems to stimulate higher-order thinking skills. However, by students having a format to write in Step 3, "sharing opinions" can easily fall into just reading out loud what they wrote. If this happens, the opportunity for students to enhance higher-order thinking skills can be taken away. To take another example in *Landmark*, two steps are provided in the communication task. In Step 1, students listen to a dialogue and fill in the blanks to comprehend the content in English (listening, writing / LOTS: understanding). In Step 2, students first write about their opinion using the format provided in the textbook, and then talk about their opinions in groups (writing, speaking / HOTS: analyzing, evaluating). Similar to the case in the first example, students might only read out what they wrote.

From the examples shown above, there is a need to examine whether the textbook stimulates HOTS. If the textbook does not satisfy what the teacher wants to provide, it would be crucial for teachers to consider how they can present tasks and avoid students talking in a unilateral way.

6.4 CLIL in Authorized Textbooks

To summarize the most salient potentials and problems of the authorized textbooks, first, potentials and problems of the authorized textbooks are listed below. Second, how CLIL elements are included in the authorized textbooks are shown in Figure 5.

Potentials of authorized textbooks:
☐ All language skills (communication) are included in a lesson.
☐ Lower-order thinking skills (cognition) can be enhanced in comprehension questions.
☐ All textbooks include contents that have potential in raising students' global awareness (culture).

Problems of authorized textbooks:
☐ Grammar (communication) is isolated from the content.
☐ How reading (communication) can be taught is not indicated and cooperative learning is lacking.
☐ Whether tasks enhance higher-order thinking skills (cognition) need to be examined.

Figure 5. CLIL in authorized textbooks (adopted and revised from Coyle et al., 2010, p. 56; Ikeda, 2011, p. 5).
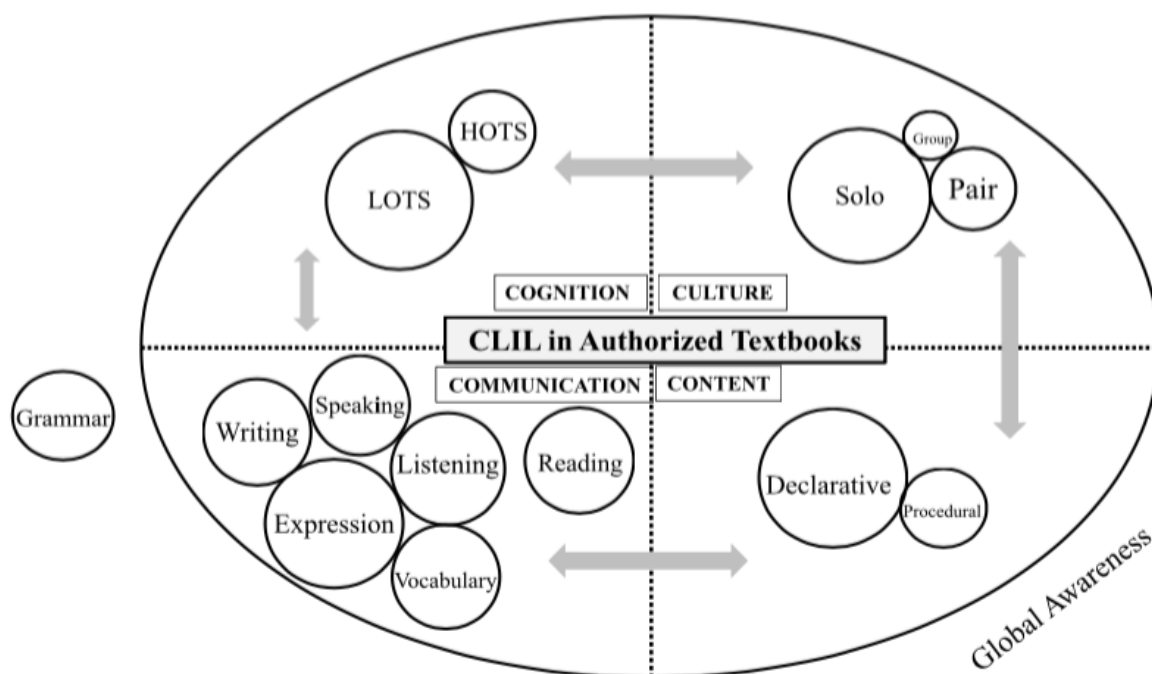

Figure 5 represents CLIL elements included in the authorized textbooks in a diagram based on the model of Coyle, Hood and Marsh (2010) and Ikeda (2011). The 4Cs are shown in four sections, each containing circles that show the skills of the CLIL Lesson Framework. The size of the circle informally and roughly illustrates the frequency that is observed in the textbooks. As shown in this figure, declarative knowledge in content, expression in communication, lower-order thinking skills in cognition, and solo work in communication are focused among the 4Cs Framework of CLIL. The outside circle shows global awareness, which connects to and integrates most of the elements of the 4Cs in the authorized textbook. Grammar is shown outside of the circle of global awareness, since grammar does not connect to or integrate with other elements of the 4Cs. Reading is also unconnected within the area of communication to show the separation with the other 4Cs such as cooperative learning and higher-order thinking skills.

7. Discussion
7.1 Potentials of Authorized Textbooks
The results indicated that language skills, lower-order thinking skills, and global awareness appeared to have been the most salient potentials. It is said that English education in Japan tends to focus heavily on acquiring receptive skills, reading and listening; however, the findings seem to indicate that the tendency of the focus on the receptive skills may not be textbooks. According to the survey conducted by BERD (2015), the percentage of speaking and writing instruction peaked in the second year of junior high school and declined thereafter. It can be inferred that teachers are focusing on the preparation for high school entrance examinations in the third year of junior high school and for university entrance examinations in later years. Although the results of this survey were taken before the revision of the Course of Study, there is a possibility that developing productive skills, speaking and writing, are put aside and instead reading sections get the heavy focus. However, as the authorized textbooks include all four language skills relatively equally, it is advisable for teachers to value all the skills and utilize what is provided in the textbooks.

The results regarding the frequency of LOTS are in agreement with previous studies (Chino & Urabe, 2019; Dummett & Hughes, 2019; Ikeda, 2016; Izumi, 2016; Kawano, 2016; Yasuda, 2021). However, it is important to note that lower-order thinking is necessary for students to break down knowledge into its components and determine the relationships of the components to one another (Anderson & Krathwohl, 2001). The foundation of LOTS allows students to move into higher-order thinking, which can be interpreted as a potential to build a basis to cognitively engage with higher-order thinking skills.

The findings for global awareness seem to indicate that the authorized textbooks are shifting towards change as the new Course of Study is revised. Before the reform of the new Course of Study, the content of the textbook often dealt with information on English-speaking countries such as the United Kingdom, the United States, and Australia (Muroi, 1999; Muroi, 2004; Yamanaka, 2006). However, according to Muroi (2004), the top 10 adopted high school English textbooks, *English Communication I* and *English Communication II*, reported that 40% of *English Communication I* in 1999 and 32% of *English Communication I* in 2004 dealt with lessons related to countries where English is the first language. As shown, the percentage that focus on inner circle countries where English is used as the primary language has been decreasing. The present study also shows that the tendency of including various countries is continuing, which indicates the shift from the dominance of Western culture to the awareness of multiculturalism.

7.2 Problems of Authorized Textbooks
The isolation of grammar learning from the content, a lack of cooperative learning and instruction in reading, and insufficient enhancement of higher-order thinking skills were revealed as problems. In the matter of grammar, MEXT (2019) states that grammar should be learned through repeated exposure in meaningful contextual communication so that learners can use the language in actual situations (MEXT, 2019). To put it in another way, grammar should be learned by integrating learning and using, and content and language. In order to satisfy the requirements, grammar learning needs urgent adaptation because of its isolation and separation from the content in the authorized textbooks. It is advisable for teachers to pay strong attention to dealing with grammar teaching when using authorized textbooks.

In terms of reading, although students need to foster reading skills, authorized textbooks provide students only with comprehension questions to achieve the goal of reading. That is teaching method of reading could still remain traditional in *yakudoku* style as previous study shows (Nishino & Watanabe, 2008; Cook, 2012; Izumi, 2022). Therefore, students should be given more opportunities to foster reading skills, which can better be achieved by having more tasks with cooperative learning integrated.

In the matter of higher-order thinking skills, less time is devoted to critical thinking and creative thinking than lower-order thinking, which agrees with the findings in previous studies (Chino & Urabe, 2019; Dummett & Hughes, 2019; Ikeda, 2016; Izumi, 2016; Kawano, 2016; Yasuda, 2021). As described earlier, higher-order thinking mostly appears in the final task. The composition varied from one textbook to another, but within a single textbook, the composition of the final task maintained a relatively similar structure. This implies that students are presented with the same level of cognitive demand when completing the tasks. It would be advisable for teachers to have students engage in a wider variety of tasks that offer to enhance higher-order thinking skills.

8. Suggestions
This section introduces suggestions to develop CLIL lessons in consideration of the potentials and problems found in the research question. Firstly, the teacher's theory of practice in relation to past literature and theories are provided. Then, suggestions for planning CLIL lessons are presented considering the results of the current study.

8.1 Importance of Integration
As pointed out earlier, what is needed to realize content and language enriched language class is the integration and connection, not separation and isolation (Izumi, 2022). In CLIL classes, integration of different language skills, learning and using, and content and language is inevitably important, as CLIL "is an innovative fusion of both" (Coyle et al., 2010, p. 1). However, the present study revealed that each element is not always integrated although integration is the key to practicing CLIL lessons. In particular, the findings show that grammar and reading are isolated from other components of the 4Cs, where adaptation should be made. In the next sections, suggestions are offered to develop CLIL lessons from the viewpoint of integration.

8.2.1 Integrate Content and Grammar. The isolation or separation of grammar is raised as a problem, which needs adaptation in all the six textbooks examined. One of the effective ways for integrating grammar is "Focus on form" (FonF), which is a pedagogical approach to strategically incorporate language teaching to assist learners' second language learning (Long, 1991; Long & Robinson, 1998). This approach provides students with opportunities to notice formal aspects of language in meaningful, communicative contexts where the main focus of the students has been primarily on meaning (Long & Robinson, 1998). Izumi (2022) also states that FonF is highly compatible with CLIL as it integrates learning of form and meaning by drawing learners' attention to form in a communicative way.

To be more concrete, when a new form is presented in the text, teachers can paraphrase the sentence to make it more understandable with familiar structures, give more examples using the new form with visual aids, or have students think about the grammatical pattern instead of explicitly explaining the structure. For example, in *Landmark* Lesson 3, the topic is about school uniforms and the focused form is passive voice. In the passage, it says, "Did you care about school uniforms when you chose your high school? This question *was asked* to about 2,000 high school students in a survey" (p. 40). In order to give more input, teachers can first prepare visuals of high school students from different countries in school uniforms. Then, ask questions such as "Which school uniform *is worn* in Thailand?", "Students in America do not seem to have school uniforms. *Are* they *allowed* to wear anything?" or "What rules *are* you *required* to follow when you wear a school uniform?". Providing more input that relates to the content of the lesson not only enhances students' understanding of the use of grammar, but also helps students understand and deepen their thoughts about the content.

8.2.2 Integrate HOTS. For content learning to be beneficial, students must be cognitively engaged. To raise students' cognitive engagement and achievement levels, learners need to be intellectually challenged to transform information and ideas, solve problems, gain understanding, and discover new meaning by applying higher-order thinking (Coyle et al., 2010). In the authorized textbooks, although higher-order thinking seems to frequently appear in the final tasks, not all tasks provide students with opportunities to analyse, evaluate, or create. In order to integrate HOTS into these final tasks, cognitive tasks of Willis and Willis (2007) can be adapted. They are listing (brainstorming, fact-finding), ordering and sorting (sequencing, ranking, classifying), comparing (finding similarities and differences), problem-solving (logic

puzzles, real-life problems, case studies), sharing personal experiences (anecdotes, reminiscence, opinions, reactions), projects and creative tasks (survey, research, creative writing, skits). For example, in the final task of *Crown* Lesson 3, students discuss the use of smartphones by referring to the lists of smartphone habits and recommendations for healthy usage (pp. 106–107). The task requires students to evaluate the usage of smartphones, but in order to engage students and enhance cognition, students can act as a child who wants to use more smartphones and parents who want to stop their child using the phone for a long time. In this way, creativity can be supplemented in the task, which can be more cognitively demanding for students.

In addition, in order to stimulate students' higher-order thinking skills, retelling can also be adapted. Retelling sections appear in most of the textbooks, where students retell the story using the pictures presented in the textbooks. The expectation is to reproduce the content and language knowledge students gained from the reading section, but by supplementing HOTS questions, the retelling section can also move beyond basic comprehension to enhance critical thinking. For example, in *Element* Lesson 3 that deals with environmental issues, teachers can add questions such as "What can be done to reduce plastics at school?" so that students can think and discuss right after their retelling (p. 41). Moreover, if the questions are given using the target form of the lesson, students will also be provided with more chances to use and learn the language.

    8.2.3 Integrate Tasks into Reading. In the present study, it was revealed that the reading section is rather isolated or unconnected to other language skills, cognition, or cooperative learning, which shows that there is a need for adaptation in this area. To help students read, teachers can adapt and add scaffolding tasks to fit their needs and improve students' skills. Walqui (2006) suggests several types of instructional scaffolding to use with English learners, and one of the effective ways is re-presenting the text.

Re-presenting the text helps students read without just translating the text. Teachers can engage students in activities that require the transformation of linguistic constructions they found modeled in one genre into forms used in another genre. Students will have opportunities to represent their own understanding of written words through different forms such as scripts or skits. Other types of genre transformation include representing a poem as a narrative, changing a third-person historical narrative into an eye-witness account, or expressing scientific text as a letter to a friend or in a poster. In that way, students will need to go back to the text, reread it, and discuss the situation, issues and people involved to decide what those people, as characters in a dialogue, would say to each other. This can also increase cooperative learning, which can also benefit students' learning.

To take an example, in Lesson 8 *Power On* (pp. 118–129), the topic deals with the current situation in which the cod (a type of fish used for fish and chips in Britain) used is decreasing. The reading is presented in a descriptive text, but in order to have students re-present the text, students can act as a restaurant owner in Britain and argue that the British food culture is in danger by explaining the current situation that is explained in the reading. By doing so, students can try interpreting the content of the text by using their higher-order thinking skills as well since students are required to identify how the character would act, what the background of the story is, and how they can recreate the story in a different form.

9. Conclusion

Considering advantages and pitfalls of authorized textbooks, in-service high school teachers

should strategically adapt the 4Cs of CLIL by utilizing the potentials and overcoming the problems to adapt authorized textbooks as CLIL materials. Considerations are suggested for in-service high school teachers in the dos and don'ts list below.

Dos
- Use contents presented in the textbooks
- Integrating language and content, especially be aware of the focused form
- Use language knowledge and skills presented in the lessons in tasks, but supplement scaffolding
- Integrate cooperative learning in reading
- Adapt questions or tasks to enhance higher-order thinking skills

Don'ts
- Do not use authorized textbooks without identifying the 4Cs
- Do not emphasize learning language knowledge isolated from the content
- Do not just translate in the reading sections
- Do not put aside productive skills

It is hoped that this study contributes to the further development of CLIL in Japan so that more in-service and future practitioners will be able to teach quality yet feasible CLIL by using authorized textbooks. More critically, it is expected that authorized textbooks would adopt to the new teaching and provide teachers with helpful guidance for fruitful language learning in Japanese classrooms.

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Does Soft CLIL work in Kosen? -A comparative study of students' self-assessment between Kosen and a private secondary school-

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Abstract
Content and Language Integrated Learning (CLIL) is getting more and more attention in the realm of National Institute of Technology, which is called Kosen in Japan and some Asian countries, partly because of the cross-over between the concept of CLIL and the educational objectives of Kosen. However, considering that the main purpose of students in Kosen is to learn about technology, it should be expected that they show less interest in learning about non-technological subjects or topics in English than students in an ordinary secondary school. In order to investigate the effectiveness of a Soft CLIL approach in Kosen, this research analyzes the self-assessment of learning in Soft CLIL class conducted by students in Kosen and a private secondary school. The Soft CLIL classes in both schools were planned by the same teacher, the textbooks used in the classes were both government-approved textbooks for high school students in Japan, and the items in the self-assessment were almost the same, asking students to assess their learning of content and language on a scale of 1-5. Comparing and analyzing the outcomes of their self-assessment, students in Kosen report higher self-assessment ratings than those in an ordinary private secondary school. This implies that Soft CLIL can work in Kosen better than in ordinary secondary schools. One of the possible reasons for the differences in the ratings of self-assessment might be the effect of entrance examinations to higher education, some of which require high school students to memorize a lot of knowledge which is expected to be on the exams. Further studies will be necessary on the reason why the Soft CLIL approach worked well in Kosen.

Keywords: CLIL, Soft CLIL, Government-approved textbook, self-assessment, Kosen

1. Introduction

Japan's National Institute of Technology (NIT), which is called Kosen in Japanese, issued their Model Core Curriculum (MCC) in 2023. MCC articulates their educational objectives, one of which is "to educate students to be able to contribute to the well-being of people or society by utilizing their scientific or technological skills and knowledge" (NIT, 2023, p. 10). In order to realize this educational objective, MCC says students need to develop not only scientific and technological skills but also competences, such as communication or cognitive skills. This emphasis on competences is compatible with the concept of Content and Language Integrated Learning (CLIL). Ikeda (2017) stated that CLIL can foster students' global competencies such as communication skills, cognitive skills, or global awareness, some of which align with the educational objectives of MCC. Therefore, it is reasonable to implement CLIL for Kosen students for the sake of fostering their competences and English proficiencies. Especially, if the content of the CLIL class focuses on engineering, fruitful learning outcomes can be expected, considering students' interest in the target content.

However, there could be some possible arguments against the feasibility of CLIL in Kosen. First, there may be few English teachers who can teach engineering in English because English classes are mainly taught by English teachers in Japan, who are not supposed to teach other subjects. This may be the reason why Soft CLIL, which is more topic-based than content-based, is more common in Asian countries, including Japan (Ikeda, 2021). If a Soft CLIL class in

Kosen approaches learning content which is not related to engineering, that could discourage Kosen students to learn about the content in English, which would possibly diminish the learning outcomes. Second, due to an increase of students with developmental disorders, including autism (Kotani, 2017), it might be difficult to have a communicative English class in Kosen. For such students, CLIL can be a double burden because it requires them to communicate with each other in non-native language.

Considering these possible difficulties, this paper tries to analyze the feasibility of Soft CLIL by comparing Kosen students' self-assessment of their learning in Soft CLIL class with the one conducted by students in a private high school in Japan. Both Soft CLIL classes were planned by the same teacher who had implemented CLIL for five years.

2. Theoretical Perspective
2.1 CLIL
CLIL is defined as "an education approach in which various language-supportive methodologies are used which lead to dual-focused form of instruction where attention is given both to the language and the content" (Coyle et al., 2010, p. 3). CLIL builds on what is called the *4Cs framework* (Coyle et al., 2010), or content, communication, cognition and culture. Coyle et al. (2010) also said as follows.

> the need to develop a 21st-century workforce has further stressed the importance of perceiving competence as an amalgamation of knowledge and skills. Indeed, the 4Cs principles actively promote both knowledge and skills development and are therefore suited to differentiated learning outcomes across a range of contexts" (p. 156).

This point is also supported by Ikeda (2021), one of the leading CLIL researchers in Japan, who notes the significance of this approach (pp. 154-155). Izumi (2016) explained the possibility of CLIL working as a motivational factor for students by emphasizing the importance of instructional content, which can greatly motivate students to learn when they are interested in the content (p. 80).

Ikeda and Pinner defined Soft CLIL as "an alternative version of Content and Language Integrated Learning in which, although both language and content learning aims are the focus, the emphasis is primarily on language learning" (2021, p. 1), while Hard CLIL is a "prototypical content-oriented model" (p. 1).

3. Literature Review
3.1 CLIL and Competencies
Kudo (2018) reported that his Soft CLIL class could foster university students' higher order thinking skills more successfully than his non-CLIL class. Kudo (2019) also reported the positive outcome of his Soft CLIL class on fostering his students' global awareness. These reports support the theoretical possibility of CLIL fostering students' competences. Yamazaki, one of the leading CLIL practitioners in Japan, has been implementing CLIL since 2011 (Yamazaki, 2019) in his high school. He also explained the purpose of CLIL implementation as follows: "[T]he aim of the lesson for collaborative learning, and also CLIL, should be that learners can achieve the competency to apply the content knowledge they learn in classrooms to their daily lives" (2019, p. 157). One of the target competencies he mentioned is cognitive competence. Regarding this, he stated, "Cognition and Language: if cognition and language learning are not integrated, learners will first think in Japanese and then translate the thoughts into English." (2019, p. 163). This implies the potential to nurture students' English proficiency

and competencies through CLIL lessons in a Japanese secondary school context, even though the progress of students' competencies is not quantified.

Based on conclusions of the papers above, it should be possible to develop students' competencies through CLIL lessons in Kosen, which is aligned with the educational objective articulated in Kosen MCC. However, as Izumi (2016) mentioned, the learning outcome of Soft CLIL can be diminished if its target content does not match students' interest. If so, Soft CLIL focusing on non-engineering topics may not foster students' competencies as effectively in Kosen as in university or public high schools.

3.2 CLIL in Kosen
Many practice reports in Kosen can be found. Ichikawa (2023) reported that she implemented a Soft CLIL class focusing on gender. Kawabata and Kitou (2022) also implemented Soft CLIL in Kosen, with a focus on diversity as their target content. They reported their students' successful learning on both content and language in their Soft CLIL class. Hard CLIL was also implemented in Kosen. Nakamura et al. (2022) implemented a Hard CLIL class in which chemistry was taught in English. In their report, they mentioned choosing to teach basic chemistry in English to achieve one of their educational objectives, which is to prepare students for success on a global scale in the future. Aoyagi et al. (2016) reported that they had created a Hard CLIL textbook focusing on engineering with the collaboration of English teachers and implemented the Hard CLIL class. This collaborative CLIL implementation can serve as a good model for implementing Hard CLIL with a focus on engineering in Kosen, although it might require more time for English teachers to prepare for such a CLIL class.

Based on this, it would be feasible to implement both Soft CLIL and Hard CLIL in Kosen. However, no report was found in which a government-approved textbook was used in Soft CLIL classes, or that focuses on the comparison of the effectiveness of CLIL between Kosen and other equivalent educational institutions such as a high school or college. Considering the significance of target content in CLIL, as emphasized by Izumi (2016), the comparison, especially regarding Soft CLIL, should be considered important. This is because students in Kosen are likely to find Soft CLIL less engaging if the content is not related to engineering.

3.3 CLIL in Secondary Schools
CLIL implementation is reported both by teachers in junior high school and by ones in high school. Takagi, working for a public high school in Japan, stated that well-designed CLIL lesson plans could encourage her students to get interested in instructional content, think deeply about the content, learn cooperatively with peers, and give a presentation in English (2019, p. 31). Uda, a teacher at a public junior high school in Japan, stated that her CLIL lessons could promote students' higher order thinking thanks to the integration of the learning components of 4Cs (2021, pp. 24-25). It is noteworthy that those two teachers utilized a government-approved textbook to implement Soft CLIL for their students.

Although it is easier to find Soft CLIL practice reports in the realm of secondary education, there are some, not many, reports of Hard CLIL implementation in Japan. Kawakami (2022), working for a private secondary school that has students with high English proficiency, reported the outcome of his history CLIL class that promoted conceptual understandings of discrimination and conflict through some historical topics. He conducted this Hard CLIL class by cooperating with a history teacher working for the same school.

Upon reviewing the literature, both Soft and Hard CLIL appear to be feasible in the realm of

secondary education. Considering the importance of target content in CLIL that Izumi (2016) mentioned, it might be easier to implement CLIL in those schools than in Kosen, because students usually have not determined their majors yet and can be interested in any subject or topic.

4. Research Question, Method, and Settings
4.1 Research Question
Based on the literature review above, it is important to analyze the effectiveness of Soft CLIL in Kosen whose content is not related to engineering. In order to approach this research purpose, this paper approaches the following research question:

> In which type of school do students self-assess as 'high', learning outcomes of a Soft CLIL class focusing on a non-engineering topic, Kosen or a private high school?

4.2 Research Method
This paper analyzes the self-assessment of students who learned in Soft CLIL class focusing on non-engineering topics. The lesson plans were developed by the same teacher who had implemented CLIL for five years. The research settings and the items on which students self-assessed their learning outcomes are shown in the following sections. The self-assessment was conducted on a five-point scale. The calculation of effect size and t-test on the self-assessment results was performed using the effect size calculator (Mizumoto, n.d.). As the repetition of a t-test on the items in a single questionnaire can lead to false understanding of research data (Mizumoto & Takeuchi, 2008), the t-test was performed only on the self-assessment item with a statistically significant effect size.

4.3 Research Settings
This paper analyzes the self-assessment of students who studied in Soft CLIL class in two different schools. One is a private high school, and the students were in the second grade, aged 16-17. The number of the students was 58. The other is a Kosen, and the students were also in the second grade, aged 16-17. The number of the students was 85. In both schools, a government-approved textbook was used. The two schools did not use the same textbook, but both of them were the most difficult versions published by each company. Utilizing the topics in the textbooks, the lesson plan of Soft CLIL was developed by the same teacher who had implemented CLIL for five years, the author of this paper. The Soft CLIL class at the private school was conducted by the author's colleague, an English teacher. This was the teacher's first time implementing a CLIL class, potentially influencing the students' self-assessment results.

The Soft CLIL class at the private school centered on how Steve Jobs made significant decisions in his life. The reading material in the textbook quoted three important lessons from his famous speech: "Connecting the dots," "Do what you love," and "Follow your heart and intuition." Students in the Soft CLIL class watched three videos that are relevant to each of the lessons, and thought about how they want to utilize the advice. The unit of the textbook concludes with his very important remark, "Stay hungry, stay foolish." So, as the final task, students were required to give a speech about the following prompt: "If you 'stay hungry and stay foolish', how do you want to live in the future?" Therefore, the learning content of this CLIL class was a life course on how to live a good life. Students gave a variety of speeches, many of which the teacher who implemented the Soft CLIL assessed as impressive. The following is the outline of the Soft CLIL class conducted at the private high school.

Table 1. Outline of Soft CLIL class in the private high school

*Lesson	Activity	Details
1	Oral Introduction	Teacher did oral introduction to the first part of the reading material in the textbook. Students listened to the teacher.
	Reading	Students read the first part and skimmed a lesson from the reading passage ("Connecting the dots").
	Watching	Students watched a TED video in which a girl talked about how music saved her life, which is relevant to the lesson in the reading passage.
2	Expressing	Students looked back their past experience, and wrote about one useful experience that they had in the past.
3	Oral Introduction	Teacher did oral introduction to the second part of the reading material in the textbook. Students listened to the teacher.
	Reading	Students read the second part and skimmed a lesson from the reading passage ("Do what you love").
	Watching	Students watched a TED video in which a boy talked about what he achieved by doing what he loved, which is relevant to the lesson in the reading passage.
4	Expressing	Students were asked to think whether they were doing what they loved at that time, and also whether what they loved would be useful in their future. They shared their opinions after that.
5	Oral Introduction	Teacher did oral introduction to the third part of the reading material in the textbook. Students listened to the teacher.
	Reading	Students read the third part and skimmed a lesson from the reading passage ("Follow your heart and intuition").
	Watching	Students watched a TED video in which an elderly woman talked about how she followed her heart to establish a school in Afghanistan despite being in danger of death.
6	Expression	Students were asked to look back at their past experience of not following their intuition, and to share their experience with their classmates.
7	Oral Introduction	Teacher did oral introduction to the last part of the reading material in the textbook. Students listened to the teacher.
	Reading	Students read the last part and skimmed a lesson from the reading passage ("Stay hungry, stay foolish").
	Explanation of Final Task	Teacher explained the details of the final task, in which students were to give a speech about how they want to live in the future if they "stay hungry, stay foolish".
8	Speech Prep	Students prepared for the speech.
9	Speech Session	Students first gave a speech in a group with 4-5 students. After that, they chose a group representative, and the representatives gave a speech in public to everyone in the classroom.

*Each lesson was 45 minutes

In the Soft CLIL class at Kosen, a Round-based Soft CLIL approach (Izumi, 2022) was employed. The content of the CLIL class focused on education. The topic was taught in accordance with the content of the government-approved textbook used in the school. Several concepts about education were introduced in the class, which were constructivism, social efficiency ideology, and the concept of *skhole*. These concepts are so abstract that the teacher

asked questions that related these concepts to their everyday lives, such as 'Is your school based on constructivism?' or 'Do you want to attend a school based on the social efficiency ideology?'. After learning about those concepts, students were required to give a speech on the theme: 'What is a good education?' The teacher that planned and implemented the Soft CLIL, who is the author of this paper, assessed many of the speeches as impressive, similar to the teacher in the private high school did.

It should be noted that it was the first time for the students in both schools to have a Soft CLIL class utilizing a government-approved textbook. For the students in Kosen, that was the very first time to learn in a CLIL class. For the students in the private school, some of them had prior experience of learning in a CLIL class, which may affect the result of the analysis to some extent.

Table 2. Outline of Soft CLIL class in Kosen

*Lesson	Activity	details
1	Oral Introduction	Teacher did oral introduction to the first part of the reading material in the textbook. Students listened to the teacher.
	Reading	Students read the first part of the English passage. First, they answered several comprehension questions. After that, they were told to find some new words whose definitions were shown in Japanese on the screen in the classroom. Then, after teacher explained very briefly about the target grammar in the reading passage, students were told to translate the passage into Japanese with their partners.
	Talking	On the screen, teacher showed one question that is relevant to the content of the reading passage ("Why do you come to school?"). Students talked about their idea with their partner. After that they changed their partner, and talked about the same question with a different partner.
	Writing	Students wrote a short English passage in more than 80 English words, and handed in to the teacher.
2	Oral Introduction	Teacher did oral introduction to the second part of the reading material in the textbook. Students listened to the teacher.
	Reading	Students read the first part of the English passage. They got the same scaffolding as the first lesson.
	Defining and Talking	On the screen, teacher showed one concept that is relevant to the content of the reading passage ("Skhole"). After explaining the definition in English the teacher showed a question that is relevant to the concept ("Do you enjoy going to school?"). Students talked about their idea with their partner.
	Writing	Students wrote a short English passage in more than 80 English words, and handed in to the teacher.
3, 4	Almost the same procedure as the second lesson	
5	Reviewing and Speech Prep	Teacher briefly reviewed the three concepts that were taught in class. After some sorting activities, students began to prepare for the final task; speech (The theme: what is a good education?).
6	Speech Session	Students first gave a speech in a group with 4-5 students. After that, they chose a group representative, and the representatives gave a speech in public to everyone in the classroom.

*Each lesson was 90 minutes

5. Results, Analysis, and Limitations

5.1 Results and Analysis

The results of students' self-assessment are shown in Table 3. The effect size (g) indicates the magnitude of the gap between the average scores for each self-assessment item (Mizumoto & Takeuchi, 2008). The item (5-1) was asked only to the students in the private school, while the item (5-2) was to the ones in Kosen. Both items pertained to the target content of each Soft CLIL class; thus, the effect size between these two items was calculated to compare the self-assessment of learning the target content.

Table 3. Results of students' self-assessment

Items of self-assessment (five-point scale)	Kosen ($n = 85$)			Private High School ($n = 58$)			*g
	**Mean	*Median	SD	Mean	Median	SD	
(1) I could improve my writing skills through this CLIL class.	4.2	4	.80	3.8	4	.84	.49
(2) I could improve my speaking skills through this CLIL class.	4.3	4	.72	3.8	4	.87	.63
(3) I could improve my reading skills through this CLIL class.	4.4	5	.62	3.4	3	.93	1.31
(4) I could improve my listening skills through this CLIL class.	4.2	4	.78	4.1	4	1.02	.11
(5-1) I could think more deeply than before about how I want to live in the future.				4.4	4	.76	.13
(5-2) I could think more deeply about education than before.	4.3	5	.73				
(6) I could learn collaboratively with my classmates.	4.7	5	.54	4.5	5	.70	.33
(7) I enjoyed learning in CLIL class.	4.3	4	.78	4.5	5	.73	.26

**Rounded down to the second decimal place
*Rounded down to the third decimal place

Observing the means of (5-1), (5-2), (6), and (7), as they all exceed 4.0, it appears that many students in both schools perceived they successfully learned about the target content in English with their classmates and reported enjoying the learning opportunity. This assumption is supported by the effect sizes of the items, which are all below .49, meaning that the gaps between the mean are statistically small. This might imply that the unfamiliarity of the private school teacher conducting CLIL class does not greatly affect the students' self-assessment. It should be noted that many of the students in Kosen reported success in collaborative learning, which the author expected could be challenging for some of the students because of the relatively large number of students with autism in Kosen. This implies that, as Ikeda (2021) stated above, CLIL can be an effective framework to nurture students' competencies in the context of Kosen, meaning that the CLIL approach can be aligned with Kosen's educational objectives. However, it is noteworthy that although their effect size is small, the mean of (7) is higher in the private school than in Kosen, which could imply that the students in Kosen are less interested in learning about a non-engineering topic in English than the students in the private school, as predicted above.

Observing the effect sizes of (1), (2), and (3), there seem to be bigger gaps between the two

research settings, especially in (3). (4) does not have as big a gap as the other three items about English skills, possibly because students in the private school watched several short videos in which the speakers spoke a very fast English. The gaps between the items of (1) and (2) could be affected by the fact that students in Kosen had more writing and speaking activities. However, although students in both schools had almost the same reading activities, the gap of the means of (3) was the biggest, whose effect size is 1.31, meaning that the gap can be regarded as statistically very big. (3) is the only self-assessment item with an effect size larger than 0.8. A t-test was conducted on the item (3), revealing that $p = .00$. This indicates that it is statistically appropriate to assert a gap between the means of item (3).

This could be because of the differences in the assumption about the reading skills between the students at both schools. It would be easier for students in Kosen to feel that their reading skills had been improved because they tried to read the same reading passage again and again with the scaffolding of vocabulary and grammar in the passage. Students in the private school had similar scaffolding, but they might not have felt the improvement of their reading skills with the scaffolding because of the entrance examinations to higher education. Given that most students in the private school pursued higher education after graduation, their learning was significantly influenced by the format of the English tests in entrance examinations. Of course, there is no scaffolding in the reading tests, so the students might have felt that they failed to understand the reading passage if they couldn't figure it out without any hints about grammar or vocabulary. If it is true that students in private schools have such rigorous assumption about the improvement of reading skills, it might be easier to conduct CLIL class in Kosen than in private high schools, because students in Kosen do not have to take an entrance examination to higher education.

5.2 Limitations
It should be reminded that the English teacher who conducted Soft CLIL class at the private school did not have any experience of implementing CLIL before, which could have negatively affected the outcome of the students' self-assessment. Similarly, the fact that the students in Kosen had never learned in a CLIL class could have negatively affected the outcome of the students' self-assessment due to their unfamiliarity with CLIL. However, it is also possible to consider that the unfamiliarity could have boosted their self-assessment due to their excitement with the new style of learning. Further research focusing on more controlled groups would be necessary.

In addition, this analysis is only based on the result of students' self-assessment. It would have been more desirable to collect further data, such as the improvement of their English proficiency, or of their competencies, which can be quantified by some assessment tools such as Ai-GROW (Institution of Global Society, 2023). Also, whilst the Soft CLIL lesson plans were created by the same teacher, there was an important difference between the two approaches: the emphasis on the conceptual understanding of the target content. Davis (2022) emphasized the importance of promoting conceptual understanding in Soft CLIL utilizing a government-approved textbook. The Soft CLIL class at Kosen explicitly showed conceptual knowledge regarding education, while the one in the private school didn't. This could have some bearing on the differences in the outcome of self-assessment. Further research on the effect of Soft CLIL focusing on conceptual knowledge should be conducted.

6. Conclusion
This paper researched the following question:

In which type of school do students self-assess as 'high', learning outcomes of a Soft CLIL class focusing on a non-engineering topic, Kosen or a private high school?

As stated above, students in Kosen self-assessed the learning as higher on average in almost all the self-assessment items, except for (7). This could imply that, based on the result of the literature review, Soft CLIL can be an effective framework to contribute to realizing Kosen's educational objective of nurturing students' competencies. However, looking at the effect sizes of the means of each self-assessment item, and considering the result of the t-test, the self-assessment item on the improvement of English reading skills is the only one that can be statistically regarded as indicating a difference. This could be affected by the format of the entrance examinations to higher education, which requires students to read accurately without any hints about the reading passage. It should also be noted that students in both schools self-assessed their content learning, collaborative learning, and the enjoyment of the learning as high, which implies the feasibility of the Soft CLIL approach utilizing a government-approved textbook in both Kosen and private high schools. Having said that, this paper only analyzes students' self-assessment of their learning in Soft CLIL, and there were several minor differences in how each CLIL class was conducted and by whom. The preparation of more controlled groups and more detailed data collection from these groups should be conducted to prove that students in both schools really succeeded in deepening their thoughts about the target content in English.

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