

Exploring Communicative Activities in EFL Classrooms: Can Development of CLIL Lesson Plans Work as a Communicative Task for University Students?

Mariko Takahashi, Setsunan University, Japan

The Asian Conference on Language Learning 2019
Official Conference Proceedings

Abstract

This study aimed to explore how and to what extent the development of CLIL (Content and Language Integrated Learning) lesson plans could serve as a communicative task for Japanese university students. Despite the abundant research on the application of CLIL, there had not been studies investigating if making CLIL lesson plans for younger students could function as an effective communicative task for EFL university students in CLIL English courses. As part of the unit on education for children, 77 students from 4 classes developed a lesson plan in groups for teaching mathematics or science to Japanese elementary school students in English. The topics included multiplication and division, fraction, the water cycle, solid, liquid, and gas, photosynthesis, magnet, and gravity. Twenty-four lesson plans were produced, and the data were analyzed qualitatively mainly from three perspectives: types and contents of the activities, linguistic expressions and instructions, and other features including the preparation process that potentially contributed to the university students' own learning. The students successfully developed a variety of fun and creative activities intended to facilitate classroom interaction including examples (explanation types and experience-based types), experiments (larger-scale experiments and experiments in small groups), and games. They carefully selected English expressions appropriate for the target audience of their choice. Their reactions to this task were positive, and this study suggested that the task could be a highly effective CLIL task for university students.

Keywords: English education, CLIL, communicative task, EFL, Japan

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Introduction

According to Mehisto, Marsh, and Frigols (2008), students in language classes can learn more effectively “if they are not simply learning language for language’s sake, but using language to accomplish concrete tasks and learn new content” (p. 11). As the researchers observed, the importance and effectiveness of Content and Language Integrated Learning (CLIL) has been emphasized in English language teaching, especially in Europe. Mehisto et al. (2008) defined CLIL as “a dual-focused educational approach in which an additional language is used for the learning and teaching of both content and language” (p. 9). In other words, CLIL accentuates the integration of learning the language and learning about the content (Morton & Llinares, 2017, p. 2). CLIL has four cores, content, cognition, communication, and culture, summarized as the 4Cs (Coyle, Holmes, & King, 2009, p. 12). The fourth element, culture, is sometimes referred to as community instead (e.g., Marsh, Mehisto, Wolff, & Frigols Martín, 2012, p. 34).

There has been an extensive amount of research and practice with regard to CLIL, especially in Europe, from various perspectives. Coyle (2007) provided a conceptual framework and research paradigm of CLIL, focusing on the 4Cs framework. She put emphasis on the importance of culture and claimed that “intercultural learning and understanding potentially permeate CLIL learning and teaching” (p. 550). She also maintained that communication is not only about learning the language but about “using and developing language *of* learning, *for* learning and *through* learning” (p. 550). Mehisto et al. (2008) also emphasized the four principles, using the concept “community” in place of “culture.” In their theory, cognition was regarded as the driving force of effective CLIL practice (p. 30). They also outlined 30 core features of CLIL, under the categories of multiple focus, safe and enriching learning environment, authenticity, active learning, scaffolding, and co-operation (pp. 29-30).

Coyle et al. (2009) then proposed guidelines of CLIL, and Marsh et al. (2012) wrote the European Framework for CLIL Teacher Education, both outlining the contexts and key concepts of CLIL. In response to the popularity of CLIL in Europe, research has been conducted at various stages of education. For example, Egger and Lechner (2012) explored research and classroom practice of CLIL in Europe and illustrated positive effects of CLIL on primary school students’ cognitive development. Serra (2007) also conducted research at primary school, demonstrating the process of development of L2 in CLIL mathematics classes in Switzerland. Whittaker, Llinares, and McCabe (2011) focused on secondary school in Spain and showed how CLIL history classes helped to improve learners’ English writing skills. They observed that CLIL assisted the development of academic registers (p. 357). Denman, Tanner, and De Graaff (2013) investigated the effectiveness of CLIL at junior vocational school in Netherlands and found a positive impact of CLIL on developing a successful curriculum for bilingual education at vocational schools.

Research has also been conducted extensively at the tertiary level in Europe. Fortanet-Gómez (2013) investigated a multilingual program of Spanish, Valencian, and English at a Spanish university as a case study and illustrated how CLIL had been utilized in the program in the context of multilingual higher education. Hellekjær (2010) analyzed CLIL courses at Norwegian universities and compared students’ understanding of the contents in English and in Norwegian. He identified areas where

students had more difficulty in English including vocabulary and note-taking and pointed out the necessity of addressing language difficulties. As these studies have shown, CLIL has been proved to be an effective way of teaching a second or foreign language in Europe at various levels of education when it is implemented carefully based on the context.

Students' perceptions of CLIL courses have also been shown to be generally positive. For instance, Pladevall-Ballester (2015) demonstrated that primary school students held positive attitudes toward CLIL because they could learn new concepts and work on their English at the same time (pp. 55-56) based on their study in Spain. Lasagabaster and Doiz (2016) added, as a result of their study in Basque, that secondary school students felt that their English skills improved in CLIL courses more than in other English courses except for grammar (p. 122). At the tertiary level, for example, Aguilar and Rodríguez (2012) found that participants in their study at a Spanish university perceived that their vocabulary, listening, and speaking skills in particular improved in CLIL courses. These studies indicate that CLIL has been accepted positively at different levels of education in Europe.

In correspondence to the popularity of CLIL, in-class activities for CLIL classes as well as instruments for assessment have also been devised and proposed. Dale and Tanner (2012), for example, listed subjects that the authors observed would be particularly suitable for CLIL such as economics, mathematics, geography, and art. They also suggested activities that could be applied to teaching various subjects from activities for activating to activities for assessment, review, and feedback. Mehisto et al. (2008) also outlined activities teachers could adopt during the first week of teaching at primary, secondary, and vocational schools extensively. They then provided further guidelines for implementing CLIL courses with concrete activities as well as rubrics for assessment. Nikula (2015) focused on chemistry and physics and found that pre-tasks and post-tasks were more instrumental in teaching content specific concepts and terminology compared with hands-on tasks. She observed that "it seems that the potential exists for adding more explicit language focus in CLIL," but at the same time notified that "[a]wareness-raising of the interconnectedness between language and content matters" was necessary (p. 25). Massler, Stotz, and Queisser (2014) proposed an assessment model for primary school students in CLIL courses, consisting of three dimensions of subject-specific themes, subject-specific skills and competences, and communicative competences in the foreign language (p. 142).

Research in Europe has thus demonstrated that CLIL is widespread and that it has been proved to be popular and effective. However, in Japan, where the current study took place, CLIL is still at its initial stage. English is learned as a foreign language (EFL) in Japan, and opportunities for communicating in English are limited outside of the classroom (Sergeant, 2009, p. 60). The importance of communicative language teaching (CLT) has been emphasized in English classrooms (Abe, 2013) as well as the importance of task-based language teaching (TBLT) (e.g., Bygate, 2016). However, as Brown (2015) observed, CLIL is "relatively new in Japan but growing in popularity, particularly in English language-learning contexts" (Brown, 2015, p. 1). A growing number of publications on CLIL underscores this trend. Based on a keyword search on CiNii (<https://ci.nii.ac.jp/>), an index of publications in Japan, there were only eight papers published with CLIL in the title in 2012. There was a steady growth

in the number of publications between 2013 (27 papers) and 2016 (63 papers), and the number has been around the same since then. There is only a limited number of books available on CLIL in Japanese. For instance, Watabe, Ikeda, and Izumi (2011) provided an overview of CLIL approach at their university, followed by sequels with more concrete suggestions and materials (Izumi, Ikeda, & Watabe, 2012; 2016). As the overall scarcity of literature implies, CLIL still has a lot of room to be investigated in Japanese contexts, and activities and tasks in classrooms have not been fully illustrated or analyzed.

The present paper focuses on a possible communicative task in a university CLIL course. The present study took place in CLIL English courses at a university in Japan. According to Ikeda, CLIL can be classified into two types “strong/hard CLIL” and “weak/soft CLIL.” The former is content-oriented, which is the typical type of CLIL in Europe (p. 32). On the other hand, the latter is language-oriented, “[t]aught by trained CLIL language teachers to help learners develop their target language competency as a primary aim and their subject/theme/topic knowledge as a secondary aim” (p. 32). The context of the present study fell under the second category as the courses were taught by a non-content language instructor. The courses could be called as content-based language teaching (CBT) as well, but the label CLIL is used reflecting the position that they can be “considered as two labels for the same reality” (Cenoz, 2015, p. 12). There were assigned textbooks *Contemporary Topics* consisting of four textbooks (in the order of the difficulty level: Clement & Lennox, 2009; Solórzano & Frazier, 2009; Kisslinger, 2009; Beglar & Murray, 2016). Various topics of today’s society are covered in these textbooks including topics from psychology, sociology, communication, business, technology, biology, media, and agriculture. One of the unit topics was on education, more specifically on education for children. After finishing the assigned unit mainly consisting of listening, vocabulary, and discussion, it was decided to include a task or activity that would further help students learn and think about the topic in English.

Since the unit was on education for children, the task which was adopted was to have university students develop CLIL mathematics or science lesson plans for elementary school students. This was because the task would enable the university students to apply the concepts they had learned in the unit to a real-life example. In addition, they had been elementary school students until several years before so that they would be able to recall elementary school English classes well. Some students also had experience teaching elementary school students at cram schools as their part-time job. The term “elementary school” rather than “primary school” is used from here to reflect the Japanese context. As a task is defined as “a workplan that requires learners to process language pragmatically in order to achieve an outcome that can be evaluated in terms of whether the correct or appropriate propositional content has been conveyed” (Ellis, 2003, p. 16), the term “task” rather than “activity” is adopted here.

In other words, the research question of the present study was as follows: does making mathematics or science CLIL lesson plans for elementary school students function as an effective communicative task for university students who are themselves taking CLIL based English courses? This study adopted the position of Mehisto et al. (2008) and defined the 4Cs of CLIL as content, communication, cognition, and community.

Methodology

Participants

In total, 77 first-year humanities Japanese university students took part in this study. The students were from four English communication classes which were based on CBI/ CLIL syllabi as mentioned above. Three classes were upper intermediate level (57 students), and one class was intermediate level (20 students). The main unit participants were working on was Unit 5 “How we each learn best” from *Contemporary Topics 2* (Kisslinger, 2009, pp. 42-51), which dealt with multiple intelligences theory and how people, especially young children could benefit from different ways of learning and assessment. Participants generally spent two class periods (180 minutes) on this unit. It should be noted that some classes had started a different unit due to the requirement of the assigned syllabus, so the timing of the implementation of the task slightly differed among the classes. The medium of instruction was English although the instructor did not prohibit participants from switching to Japanese when they tried to discuss complicated concepts in groups. Participants gave approval for the researcher to use their data anonymously for research purposes.

Materials

The name of the task was “teaching kids in a fun and creative way.” Two types of materials were prepared for this study: an example and a worksheet. The example was for having participants obtain a general idea of what the instructor expected them to do. It was also for having them overview a typical structure of a lesson plan because it was the first time for most of them to develop a lesson plan all by themselves. As the example, an episode from a YouTube edutainment series *Wonder Quest* (Maker Studio, 2015) was chosen. The series was created by a popular YouTuber stampylonghead (more than 9 million subscribers as of May, 2019) in collaboration with Disney’s Maker Studio. The first season consisted of 12 episodes, and an episode was uploaded on YouTube once a week from April 25, 2015 to July 11, 2015. It covered topics such as division, fraction, photosynthesis, water cycle, and planets. A part of Episode 2, which was on the solar system, was selected as the example material. This topic was chosen because it was different from the topics participants had to work on so that it would not interfere with their ideas. The video was used solely for academic purposes.

Along with the video, a short lesson plan based on the episode was also prepared. It briefly outlined a lesson plan of teaching the names and order of the planets of the solar system to third year students by having them use small balls as models of the planets. In addition, a blank worksheet was prepared which only had an instruction and headings. The instruction said “suppose you need to teach math or science to Japanese elementary school students in English,” and the headings were “your topic,” “aim,” “materials,” and “lesson plan (for X students, Y year).”

Procedure

First of all, participants watched the edutainment video mentioned above as an example. They then went over the example lesson plan with the instructor. The

instructor told them that examples, experiments, and pair or group work could be effective ways of teaching without giving them any further examples so as not to influence their ideas. In addition, participants learned that imperatives as in “introduce today’s topic” could be used on their lesson plan. The worksheet was then distributed to participants who had been divided into groups of three or four. A topic was randomly assigned to each group so that there would not be overlap of topics within the same class. The topics were multiplication and division, fraction, the water cycle, magnet, solid, liquid, and gas, photosynthesis, and gravity, chosen partly in reference to the *Wonder Quest* series. Participants then had about 45 minutes to prepare a lesson plan in their group. Finally, they did a short demonstration of their lesson plan to the class at the end of the class or at the beginning of the next class. The instructor could only give each group several minutes for the demonstration due to the restriction of the syllabi, but participants were encouraged to “teach” their classmates as if they were elementary school students.

Results and Analysis

The data was analyzed from three perspectives: contents, linguistic features, and others. For this study, a qualitative approach was mainly adopted in order to analyze the features of each lesson plan in detail.

Contents

In total, 24 lesson plans were developed. Four groups from different classes worked on the same topic except for the topics of gravity and fraction. Since the instructor emphasized “creative” and “fun” before participants began the task, none of the groups adopted a straightforward lecture. Instead, they were able to develop various types of creative activities in English. The activities they came up with could be categorized into three types: examples, experiments, and games. Some groups combined more than two activities of different categories, but the classification was based on the main activity in their lesson plan. Ten groups (41.7%) used examples as their main activity, 11 groups (45.8%) used experiments, and 3 groups (12.5%) used games.

The first category, examples, could further be divided into two categories: explanation types and experience-based types. Five lesson plans had explanation type examples (two on the water cycle, one on gravity, two on photosynthesis.) For instance, one group decided to explain photosynthesis by using popular anime series *Pokémon*. Specifically, they chose some grass type characters that elementary school students were likely to be familiar with such as bulbasaur, chikorita, and treecko. They then made a story of photosynthesis by using those characters. The idea the other photosynthesis group suggested was similar but did not involve anime characters. Two groups which worked on the water cycle also made a story of the water cycle starting from rain. One group followed the story by a song on the water cycle. Finally, one group decided to explain gravity through real-life examples such as dropping the eraser on the ground. They decided to make the target sixth year students, and they included technical terminology such as centrifugal force as well.

Five groups adopted experience-based type examples in their lesson plan, that is, asking elementary school students to try out the examples in groups either by using

actual materials or by drawing the objects. One fraction group adopted this type of activity, and all the four groups on multiplication and division developed an activity of this category. For example, three groups decided to use buying apples at a grocery store as an example to teach multiplication and division for second year students. One of them wrote that they would set up mock grocery stores and ask students to go shopping for apples for their family members. The fourth multiplication and division group decided to use cats and boxes instead, probably reflecting their instructor's obsession with her cat. Doing a party with pizza and cake was the idea of the group which wrote a lesson plan on fraction.

The second category was experiments. Five lesson plans included a larger-scale experiment in front of the class, and six lesson plans included an experiment elementary school students could carry out in groups or individually. Two photosynthesis groups, two water cycle groups, and one gravity group adopted a larger-scale experiment. For teaching the water cycle, both groups suggested they build a model of the water cycle consisting of a small mountain and a river in a glass box. There should be an experiment kit like this, but explaining the whole process in English turned out to be challenging for the participants. To teach gravity, one group wrote that they would bring in different types of weights and feathers to demonstrate the mechanism and concepts of gravity to sixth year students. For teaching photosynthesis, one group used a classical experiment of using a leaf, sunlight, and iodine solution. On the other hand, the other photosynthesis group decided to create a short magic show where a "magical box" converted things into energy.

Six groups adopted a smaller experiment students could try in groups or independently. Three experiments were on magnet, and the other three were on solid, liquid, and gas. The magnet groups all decided to provide second year students with a magnet and to have them find out what stuck to it in groups at school. They came up with a list of unexpected things that would stick to magnet, for example, some colors of crayon. For the topic of solid, liquid, and gas, two groups wrote they would first prepare ice and let students melt them into water on their palm safely. They would then prepare kettles, portable stoves, and a piece of black paper (kept in a safe distance) so that students could observe water transforming into steam in groups. One of the groups added dry ice to the materials list in order to demonstrate that solid could transform directly into gas. The third group wrote that they would bring students outside to the school ground instead and let them observe what would happen to ice under the sunlight.

The third category was games (one on magnet, one on fraction, one on solid, liquid, and gas). To teach how magnets work to second year students, one group suggested a game in which students would be divided into "S" and "N" and would be asked to find someone who they could "stick" to by walking around the classroom. Jigsaw puzzles were utilized as a game to teach fraction to fourth year students in detail along with words such as "denominator" and "numerator" by a different group. The third group developed a game on solid, liquid, and gas. In this game for third-year students, students would respond to their teacher's command by moving around the classroom. Students needed to stay as close together as possible and shout "ice" when the teacher said "solid." They needed to form a circle by holding hands together and shout "water" when the teacher said "liquid." They then had to spread out as much as possible and shout "steam" when the teacher said "gas."

As the examples have illustrated, first year university students were able to devise fun and creative activities suitable for the topic and the target audience in English. They were also able to describe the activity in an explicit, clear way.

Linguistic Features

This section describes linguistic features of the lesson plans in order to analyze what linguistic aspects the university students could practice through this task of developing CLIL lesson plans for elementary school students. As described above, the use of imperatives was mentioned when the instructor went over an example lesson plan as a class, but that was the only linguistic instruction given specifically for this task. It should be noted, however, that the university students also had exposure to related expressions and vocabulary through the textbook unit before the task. Expressions they produced were of two types: expressions used to describe the activity and expressions used as instructions to elementary school students.

For the first category, not only imperative sentences but also sentences with causative verbs (e.g., “Make them draw the picture of water cycle.”) were often observed in the lesson plans. Imperative sentences were primarily used either as instructions (e.g., “Explain the relationship.” “Ask a question.” “Show experiment.” “Ask the result.”) or description of the processes (“Set the mountain in a clear box.” “Boil the water in the kettle in front of the black paper.” “Drop iodine solution”). In addition, a variety of mathematics and science related vocabulary was observed including evaporation, nutrition, oxygen, formation, numerator, denominator, air resistance, starch, and soil.

For the second category, the university students often included questions in their lesson plans to engage elementary school students as in “Do you know where rain goes to?” “How many cats are there?” “Why can you stand on the ground?” “Have you ever collected iron sands?” “Do you often put ice into juice?” They also used “you” and “we” as subjects rather than “I” as in “You can see white gas,” “You buy three boxes,” “We’re going to stick things using magnet.” As the examples have shown, questions and instructions tended to be in simple, terse expressions. In addition, the university students used technical terminology mainly for fifth and sixth year students. For example, “Photosynthesis is essential to support life,” “This green is chloroplast,” and “On the earth, gravitation is stronger than centrifugal force.” They chose different words to explain the same concepts depending on their target audience. For example, one group chose first-year students as the target audience of their lesson plan on the water cycle, and the group only used words such as “sea,” “cloud,” and “rain.” On the other hand, another water cycle group chose fifth-year students as their target audience included more technical words such as “evaporation” and “water vapor.” This may indicate that they were able to adjust the complexity of the instructions based on their target audience in English.

One setback was that small grammatical mistakes were observed in the lesson plans. For example, there were mistakes with prepositions (e.g., They want two apples of each. Experiment water and soil. What do you know gravity?), mistakes with articles (e.g., You have easy method. Put leaf under the sun. There is common point.), and mistakes with verb forms (e.g., The air become clean. If the color change, nutrition exist there. We have to sharing with people. What do you think magnets is made of?). These were not mistakes the university students participated in this study regularly

made. This is because the same students wrote sentences of the same structure correctly elsewhere in the lesson plan. The instructor was also aware that the students were able to answer grammatical questions of these types correctly when they tried grammar questions in the textbook before the task. This indicates that the instructor probably should have given them more time to proofread the lesson plans.

Others

In addition to thinking about the contents creatively and describing the ideas appropriately in English, there were some other points that may have contributed to the university students' own learning through the task. First of all, they were allowed to use dictionaries and English websites as reference when they needed to look up words and concepts they were not familiar with. As such, they could train and practice their online research skills in English. Second, they had to discuss the contents of the lesson plan with their group members both in English and (when necessary) in Japanese, so they could train their discussion skills. Third, they had to demonstrate their lesson plans to their classmates in English by using their English speaking and presentation skills. Due to the time constraint, the demonstration had to be around five to six minutes, so they did not have time to do everything on their lesson plan. However, they did a good job presenting their ideas by asking their classmates to pretend to be elementary school students. Finally, they received feedback from their classmates and the instructor in English.

Discussion

This task, despite being a short one, covered the 4Cs of CLIL as much as possible within the given time frame. Content: Although the university students could not actually try out the lesson plans to elementary school students, the topic and task were authentic and appropriate enough for the topic of education for children. Communication: The university students had to produce English expressions suitable for the topic and the target audience. They also had to talk about the topic with their classmates and demonstrate their lesson plans to their classmates. Cognition: They thought about the topic creatively, tested out different ideas, and discussed with group members. Community: They worked cooperatively with classmates in groups. They also thought about people outside of the classroom.

Looking at the task from another perspective, it fulfilled core features of the CLIL methodology according to Mehisto et al. (2008, pp.29-30): multiple focus, safe and enriching learning environment, authenticity, active learning, scaffolding, and cooperation. To be more specific, the task let the university students focus on contents as well as language and also integrate their knowledge of different fields including mathematics, science, and education. The learning environment was relaxed and friendly so that the university students could confidently try out different English expressions and contents, and there was stable access to online materials as well. Even without the actual implementation of the lesson plan, the situation of the task was realistic. The university students could recall their English and other classes in elementary school, and some of them could rely on their teaching experience at a cram school. They could demonstrate the lesson plan in the class by having other classmates pretending to be the target audience. Furthermore, this task let the university students take the lead of the contents as well as language and let them work

closely with their peers. It built onto the knowledge they already had, and encouraged them to think about the contents creatively. Finally, they had to think about communities outside of the university classroom. Feedback from the university students was overall positive, indicating that it was a fun and meaningful task for them.

Accordingly, this task of developing CLIL lesson plans for elementary school students seem to be an effective task for this topic of education for children. This is because it promotes active learning through cooperation, elicits the choice of expressions appropriate for the audience, supports the use of vocabulary and expressions specific to the topic, and encourages creative thinking. However, as irregular grammatical mistakes show, university students tend to focus more on contents compared to linguistic aspects. This could be prevented by providing a set amount of time for proofreading toward the end of the task.

Conclusion

In conclusion, preparing CLIL lesson plans for younger audience helps university students in CLIL courses think about the topic in a cooperative and creative manner. It also helps them use vocabulary and expressions different from other topics and try to produce expressions suitable for the target audience. In other words, it lets EFL university students effectively integrate contents and language in a friendly environment.

To make it more effective especially in terms of linguistic aspects, instructors can integrate linguistically challenging mathematics or science related activity as a pre-task so that university students will have more linguistic knowledge to express their ideas. It would be ideal to make group discussion fully English so that students will have even more exposure to English during the task. Finally, the task will become more realistic if university students can actually carry out the lesson plan for elementary school students. This will likely to require more preparation and practice time, but if it is realized, the task will become even more meaningful and authentic. As the role of CLIL is likely to become more significant in the near future, further research on CLIL tasks for different subjects and topics will be necessary.

Acknowledgements

I would like to extend my thanks to the audience of ACLL2019 for their insightful questions, comments, and suggestions.

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Contact email: mariko.takahashi@ilc.setsunan.ac.jp