

<Research note>

Investigating students' learning experiences in team-taught elementary English classes in Japan

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Abstract

The purpose of this pilot study is to reevaluate team-teaching practices in foreign language teaching contexts to make better use of the pedagogy. Team-teaching, or co-teaching, in foreign language classes has been a component of the Japanese educational contexts for more than 30 years. Although the benefits of having more than one teacher in class have been extensively discussed in the literature, some shortcomings of the system and difficulties in implementing it in local contexts have also been pointed out by both academics and practicing teachers. In this paper, I conducted a case study through class observation of team-taught English classes for elementary school fifth graders in northern Japan. Based on this preliminary data, I suggest that teachers involved, both Japanese teachers of English (JTEs) and assistant English teachers (ALTs), become more conscious about what learners are experiencing in team-taught English classes and make informed decisions to seek the potential of team-teaching. The framework of the four strands for well-balanced second language teaching (Nation, 2007), as well as some ideas from neuroscience for efficient learning (e.g., Brown et al., 2014), were used to analyze students' learning experiences in language classrooms. The results demonstrate that the four-strand framework and the neuroscientific principles functioned well to gauge students' classroom experiences, but some other aspects also should be examined, such as multimodal learning, teachers' language use, and collaboration. Accumulating research in these areas will inform teachers of ways to increase students' language exposure and enhance their linguistic and communicative experiences in classrooms.

Introduction

Since the Japan Exchange and Teaching (JET) program was launched in 1987, team-teaching by a Japanese teacher of English (JTE) and an assistant language teacher (ALT) has

become an integral part of foreign language instruction in Japan and later in other Asian contexts such as Korea and Hong Kong. As of 2014, one-third of ALTs (34.4%) teach both solo- and team-teach 'foreign language activities' classes for fifth- and sixth-grade students in elementary schools in Japan (Kano et al., 2016). In fact, the idea of team-teaching is not new in the educational system (Shaplin & Olds, 1964) and not particularly unusual in the Japanese educational system (Himata, 1970). However, team-teaching in foreign language classes by a JTE and an ALT opened up a new direction for collaboration as a special case of team-teaching: JTEs and ALTs have different strengths and they are expected to complement each other (Tajino & Tajino, 2000) and enrich L2 learning experiences (Carless & Walker, 2006).

The next section of this paper first considers the four benefits of team-teaching as the Ministry of Education, Culture, Sports, Science, and Technology (MEXT) advocated in their official document (MEXT, 2017). To realize these benefits, researchers have promoted collaboration among a JTE, an ALT, and students for an inclusive engagement of all participants (e.g., Park, 2014; Tajino & Smith, 2016). Other benefits from good team-teaching practices in Asian contexts are examined (Carless & Walker, 2006). Some critical views on team teaching are then reviewed, with a focus on lack of human resources (e.g., Ohtani, 2010). To examine what students are experiencing, the idea of the four strands proposed by Nation (2007) and the four learning principals established in the field of neuroscience for education—i.e., mind, brain, and education (MBE) (i.e., Brown et al., 2014; Sousa, 2011)—are considered before presenting research questions.

Literature Review

Values

The idea of team-teaching by a JTE and an ALT was introduced in a top-down fashion by the government to facilitate communicative language teaching as part of a foreign language education reform plan (Bolstad & Zenuk-Nishide, 2016). MEXT summarized the four benefits in a recent document as follows:

- 1) having two teachers in the classroom to support and guide students
- 2) displaying smooth model dialogues
- 3) creating opportunities for students to try out what they have learned
- 4) increasing student motivation and interest through an ALT's introduction of foreign

culture and lifestyle (MEXT, 2017, pp. 108–109, translation provided in Pearce, 2020).

To realize those benefits, Tajino and Tajino (2000) and Tajino and Smith (2016) argued that team-teaching would be most meaningful when all the parties involved—i.e., a JTE, an ALT, and students—establish a small multicultural community and team-learn from each other. To illustrate an example of a small multicultural community, let us peruse an example reported in previous literature. Sakuma (1997) described a *kanji* (Chinese character in Japanese) teaching/learning task. The procedure is summarized below to illustrate the four MEXT values. A JTE has a dialogue with an ALT and teaches her a *kanji* for modeling (benefit 2 above). After learning and practicing the model dialogue, student teams work out how to teach another *kanji* that they chose to teach their ALT, gaining support and guidance from the JTE (and possibly from the ALT as well) (benefit 1). Student teams then take turns and teach the ALT their *kanji* (benefits 3). Positive learner affect and intercultural understanding (benefit 4) are also achieved since students are motivated to teach their ALT *kanjis*, which are part of Japanese culture. Interestingly, the roles of learner and teacher are reversed in this case. It is likely that with some creativity, these benefits can be accomplished and students will be able to experience real language use in the process.

An empirical study on collaborative team-teaching in Korea by Park (2014) delved into more specifics by using a research methodology known as conversation analysis (CA). CA analyzes social interaction based on carefully transcribed data of audio- or video-recorded social situations. Park demonstrated that in successful team-teaching, a local non-native, English-speaking teacher and a native English teacher jointly managed teacher-talk, nominated students, elicited students' response, and addressed disciplinary issues. The two teachers offered and received support in the face of trouble to achieve teaching goals. Such collaborative moves were not necessarily planned, but rather spontaneous to meet the needs in terms of interaction and instruction; thus, the teacher roles were not fixed, but flexible.

Carless and Walker (2006) reported on a study in Hong Kong that added other benefits of team-teaming. A local English teacher and a native English teacher can provide a learning environment where students can experience different personalities, perspectives, and teaching styles. Part of these variables might come from cultural rather than linguistic differences. Teachers' spontaneous interaction has more situational authenticity than textbook conversation, and lessons become livelier and more engaging than traditional solo-teaching lessons. In addition, local teachers become more skillful in English; thus, they act as positive role models

for their students as language learners/users. Carless and Walker demonstrated that team-teaching is likely to provide an effective learning environment.

Shortcomings

On the other hand, past research has revealed more than a few potential problems with team-teaching (e.g., Kano & Ozeki, 2018; Ohtani, 2010). One of the problems is that quite a few elementary school teachers have not been properly trained to teach English (e.g., Terasawa, 2020). A good portion were taught English, when they were students, in accuracy-focused, test-driven approaches in junior and senior high schools (and probably at university as well) and thus have not experienced elementary-level communicative English classes as students. Younger teachers and pre-service teachers who have experienced communicative types of learning and studied L2 learning theories and L2 teaching methods in teacher education curriculum do not seem confident in either teaching or using English in classrooms (Sakai & Uchino, 2018). In-service teacher training has been offered to JTEs, but we do not yet know if such training meets teachers' need and to what extent it has been useful and practical (Terasawa, 2020).

Assistant language teachers (ALTs) also seem to lack qualifications, experiences, and training. ALTs are not required to hold a degree in language teaching, education, or educational psychology when applying for the job, and most are not experts in language teaching (Ohtani, 2010). Furthermore, about two-thirds of ALTs had less than seven days of orientation and training upon starting their jobs (Kano & Ozeki, 2018), and their knowledge of the Japanese school system and/or curriculum was minimal (Ohtani, 2010).

Based on these teacher profiles, some researchers, including Pearce (2020) have referred to a deficit view of team-teaching—that is, the role of one bilingual teacher with two persons. JTEs do not have sufficient English-teaching skills, and thus they need support from ALTs as linguistic and cultural resources. ALTs do not know much about teaching, language instruction, or the local educational system, and thus they need support from JTEs who know the system and the students. Under these circumstances, we have not arrived at ideas for appropriate or favorable sharing of teacher roles between the two parties, or a means of overcoming language barriers and negotiating differences in educational and cultural values (Tajino & Smith, 2016).

In fact, Pearce (2020) suspected that the four benefits proclaimed by MEXT might not be justified, and conducted a study in Japan using CA techniques. He examined classroom interaction among a JTE, an ALT, and their students in an elementary-school English class to exam-

ine if the MEXT four benefits were substantiated. He reported that having two teachers in the classroom did not seem to create opportunities for support and guidance that students can benefit from (benefit 1) in a meaningful way or provide chances for students to try out what they had learned in class (benefit 3). Another major finding was that teachers' roles were delineated: The JTE performed quite a variety of roles such as co-learner, translator, facilitator, and bystander while the ALT was a content provider and cultural informant. With these limited but well-documented results at hand, the classroom discourse was, at least in some cases, unlikely to be fruitful or dynamic.

These two distinct pictures of team-taught, elementary school foreign language classes depicted in the literature present two scenarios: one hopeful and one doubtful. It is clear that team-teaching has great potential to make foreign language classes more collaborative and therefore more effective, but thus far we have been unable to make good use of it. To explore this potential, it is imperative to first understand what is actually occurring in team-taught English classes and investigate the classroom practices in accordance with learning principles since past studies seem to have fallen short of examining students' learning experiences. In the next two subsections, learning principles as to (a) how we learn second languages (L2s) in classroom settings (instructed second language acquisition: ISLA), and (b) how our brain learns (mind, brain, & education: MBE) are briefly summarized.

How we learn second languages in classrooms: Four strands

The four strands framework (Nation, 2007) aims at an even balance of four different components to guide teaching. The strands that constitute a set of effective learning conditions are meaning-focused input, meaning-focused output, language-focused learning, and fluency development. They are based on SLA theories such as input hypothesis, output hypothesis, focus-on-form, and proceduralization, respectively. (e.g., Lightbown and Spada, 2021). However, at the same time, the strands have a commonsense justification from the time-on-task principle that we become better at something when we spend time and effort on it. The four strands are defined as follows:

- The meaning-focused input strand implies that students focus on meaning when they learn to listen and read.
- The meaning-focused output strand involves productive use of language in speaking and writing for communication.

- The language-focused learning strand indicates deliberate learning of language items such as pronunciation, grammar, and vocabulary.
- The fluency-development strand concerns making a better use of what students already know.

It is important to note that three of the strands are message-based for incidental learning, while one is form-focused for deliberate learning. This means that language classrooms should be predominantly meaning-oriented, or communicative and yet also involve attention to specific language features and items. The framework constitutes a practical guideline for curriculum development and course/class planning, indicating that if teachers roughly allocate an equal amount of class time on each strand, they can provide students with effective learning conditions to develop balanced language skills for perception and production on the one hand and accuracy, complexity, and fluency on the other. This four-strand approach to teaching L2s is versatile and applicable to practically any teaching environment, and it provides a holistic perspective in assessing students' learning experiences.

How the brain learns: Spaced repetition, retrieval, transfer, and emotion

Recent advances in neuroscientific research as to how our brains learn offer profound implications for teaching. The human brain shapes and reshapes itself on the basis of input, which we call 'learning'. Among the key ideas, of great interest for L2 teachers, would be spaced repetition, retrieval, transfer, and emotions (Sousa, 2011). Teachers can conduct evidence-based teaching by applying these established brain facts to their daily teaching:

- Spaced repetition increases retention.
- Our memory is strengthened through retrieval.
- Past learning is helpful for new learning, and it is called transfer.
- We need to feel emotionally secure; otherwise, we will not learn.

The brain makes physical and chemical changes each time it learns new information. Thus, although we can learn this information and keep it in our mind for some time, we may forget it soon. To consolidate the information into our long-term storage networks of memory, however, we need to revisit it at increasing intervals. This process is an effective learning strategy and is called spaced, or interleaved repetition (Brown et al., 2014). When we try to recall

the information after some time, we must make an effort to retrieve it from our memory. The more effortful this retrieval is, the more effective it is for learning, as neurons make stronger connections when the retrieval is laborious. Repeated effortful practice or recall in slightly different contexts updates and further strengthens our memories. In time, we are able to use that knowledge in a new situation. This knowledge transfer from one situation to another is one of the ultimate goals of teaching and learning (Sousa, 2011). Furthermore, learning does not occur in a void of emotion. In fact, emotions are integral for learning and profoundly intertwined with cognition (Immordino-Yang, 2016). Teachers must pay attention to students' affective states and provide safe and secure learning environments. Although these four principals are not an extensive list of neurological underpinnings for effective, brain-friendly learning, they are useful in gauging student learning when developing new language knowledge.

Delimitation

To understand students' language experiences in team-taught L2 classes by a JTE and an ALT, it is also essential to investigate teachers' alternate language use between students' L1 and L2 for class management and collaboration. However, this investigation requires another line of research in the areas of code-switching and code-mixing in L2 classrooms (e.g., Sert, 2005) that requires expert knowledge in pragmatics (e.g., Bardovi-Harlig, 2013) and professional methodological skills in CA analyses (e.g., Wong & Waring, 2010). As such, it is beyond the scope of the present paper.

Research questions

To understand what students are experiencing in team-taught foreign language classrooms, it is necessary to carefully observe classes and systematically analyze this observation data in order to examine the effectiveness of learning activities. For this pilot study, the data was assessed (a) in light of the four strands for balanced L2 learning, and (b) in terms of the four learning principles established in neuroscientific research. It is necessary to know how well the four strands framework and the learning principles function as yardsticks to evaluate team-teaching practices. At the same time, the data analysis may demonstrate other factors that should be examined for assessing how meaningful the students' language experiences are in team-taught English classes.

RQ 1: How well does the four strands approach help assess students' L2 learning experi-

ences in team-taught elementary English classes?

RQ 2: How well do the neuroscientific principles help assess students' L2 learning experiences in team-taught elementary English classes?

RQ 3: What are other factors that can affect the quality of team-taught elementary English classes?

Method

In May, 2022, I visited an elementary school in the northern Tohoku region and conducted a class observation.¹ The school has three classes in each grade and is considered one of the bigger schools in the area. I observed three classes taught by the same team of teachers. The JTE was a so-called English-only teacher who taught mainly English classes and did not have a homeroom. It was her first year as an English-only teacher although she had had three years of teaching experience as a homeroom teacher in another school. Her partner, from the U.S., was an ALT in a school there for three years. He did not major in education and had not had teaching experience before he came to Japan. He spoke basic Japanese fluently. On the observation day, there was another ALT (a guest assistant language teacher, henceforth GALT) who happened to be a guest teacher that day. The local board of education made this arrangement as part of the routine in order for ALTs to experience other classes and teachers (JTEs and ALTs). The GALT was a fluent speaker of Japanese.

The observed classes were three 'foreign language (English)' classes for fifth-grade students in a day. The three classes had 25, 25, and 24 students in each. As the lead teacher, the JTE planned the day's lesson. Students have two English classes in a week: one class with the JTE and the other class with the JTE and the ALT. The procedure of the day's lesson was basically the same in the three classes with minor changes depending on the situation. The main goal of the day was to make a class birthday calendar. Students tried two question sentences on classmates: "When is your birthday?" and "How do you spell your name?" Both are among the target phrases in the textbook unit, and the students had already practiced them in previous classes.

I observed the class not as a silent observer, but as a guest participant. Upon JTE's request, I did a short self-introduction using the English expressions the students had already learned and joined the calendar task. The recordings were transcribed and a part of the transcribed data was used in this study.

Results

To investigate the English language classroom, I focused on two pedagogical tasks that students worked on in the observed 45-minute class. In both cases, the JTE, as the lead teacher, went back and forth between L1 and L2, depending on the purposes of her utterance. The two ALTs mostly spoke English. The two ALTs also had an interviewer/interviewee interaction in the first task, 'Getting to know a guest ALT'. In the second task, 'Making a class birthday calendar', the two ALTs provided a model interaction and joined the activity as participants. Students interacted with peers and teachers to exchange information in English.

Getting to know a guest ALT (approximately 12 minutes)

After a warm-up Q & A interaction about the weather, day of the week, and date of the day—all through English²—the JTE moved on to the special activity for the day: introducing the GALT to the students.

The JTE started the activity in Japanese, by saying, "*Minasan kininatte mashita yone* [You've been all curious, right?] and explained how students would get to know the new teacher. "*Imamade naratta hyogenwo tsukatte XXXX-sensei (ALT) ga eigode kikimasu.* [Using question sentences you have already learned, XXXX-sensei (ALT) asked YYYY-sensei (GALT) some questions about him in English]. *Shikkari kikimashou* [Let's listen carefully]. *YYYY-sensei (GALT) no kotaewo senseiga kokubanni kaiteikimasuga minasanmo tochukara tetudattene* [I'll write down his answers on the board, but please help me]." The ALT asked and the GALT answered the following questions one by one:

- (1) "What's your name? How do you spell your name?"
- (2) "Where are you from?"
- (3) "What sport do you like?"
- (4) "What color do you like?"
- (5) "What food do you like?"
- (6) "When is your birthday?"
- (7) "What do you want for your birthday?"

The students had already learned all the questions in the program. It appeared that the students comprehended all the questions without any problems.

The JTE wrote the first two answers on the board, but in the case of questions (3) through (6), she invited student volunteers to come to the board and write the answers, by saying,

"Someone, help!" She added, "*Katakana* (Japanese characters) is fine." The JTE nominated certain students to come up and write the answer. She had other students confirm the written answer, by saying in Japanese, "*Minasan, korede attemasuka* [Everybody, is this correct?]."

The ALT asked questions in a natural way. After briefly emphasizing wh-words, he contracted the copula verb in question (1), spoke with weak pronunciation for pronouns, and used connected speech as in "How do you ..." and "What color do you ..."

The GALT used careful speech rather than connected speech in answering and gave occasional non-verbal support. When he said his name, he repeated it a few times, knowing it was difficult for Japanese students to listen to a word-final 'l'. In answering (3) the favorite sport question, the GALT mimed hitting an attack shot in a volleyball game. The pronunciation of the word, volleyball, was not easy for the students to perceive although it was a Japanese loanword from English: The word has three syllables in English while the Japanese counterpart has six morae. With the miming, students did not have trouble understanding his favorite sport, and some copied his body movements. When pronouncing the word, *navy*, in answering (4), the favorite color question, he repeated the word once slowly, separating the two syllables on a second repetition and emphasizing the primary accent on the diphthong. Students had already learned color words, but the word, *navy*, was not included in the list in the textbook; thus, it was a new word for them although they knew the word as a loan word in *katakana*. The JTE then intervened with a request first in Japanese, "*Konirowo sagashite* [Find something navy]," and added in English, "Find 'navy'." She made sure students were able to identify the color by pointing to an item in the classroom. Some students pointed out a pair of navy pants a student was wearing. The JTE said, "*ZZZZ-sanno zubonwa 'navy' desune* [The pants ZZZZ-san wears are navy, aren't they?]." Here, the GALT said, "What a coincidence!" The students looked puzzled since obviously they did not know the expression. The GALT translated it into Japanese, saying "*Guuzendane*. [It was a coincidence.] His answer to (6), the last question, "What do you want for your birthday?", made students and the other teachers grin or laugh. He answered, "Money," once in a loud voice and then repeated the word several times quickly in a lower voice. The nominated student wrote the Chinese character for money very large on the board and everybody laughed again. This marked the end of the guest introduction activity.

Making a class birthday calendar (approximately 17 minutes)

The main task of the day was to make a birthday calendar. The JTE started the phase by declaring in English, "Today's goal is ...," and wrote the goal on the board in Japanese: *Kurasu-*

no tanjyobi karendawo tsukuro [Let's make a birthday calendar by asking classmates their birthdays]. The JTE said, "*Koremadeni naratta tsukino namaewa oboemashitane?* [You've learned the names of months, right?]. *Tomodachino tanjyobimo kikemasune?* [You can ask your classmates their birthday, okay?]. *Hoshii monomo kikemasune?* [You can ask what they want for their birthday, can't you?]." For each confirmation request, the students said, "Yes," individually and confidently. She started the next sentence in Japanese, saying, "*Kyowa* [Today]," but then switched to English. She told them in English to read the goal she had written, "Okay, let's read this together." After the students read the goal out loud together, she showed the worksheet for the task on the monitor that she later distributed to the students. "*Kyowa konna kanjide karendawo tsukurimasu* [We'll make a calendar like this]. She then continued, explaining what to do step by step. Students were supposed to ask two questions: "When is your birthday?" and "How do you spell your name?" and fill in the worksheet with the dates and names of their classmates in one of the 12 boxes under the names of the months. The names of the months were written in English. First, the JTE had the ALT say the questions and the students repeated them. She then asked the students how to say the sentences in English again, "*Tomodachino namaewa dou kikimasuka* [How do you ask your partner their name?]" and "*Tomodachino namaewa shitteirukedo namaeno kakikatawa shirimasen. Do kikimasu ka* [You know their name, but you do not know how to spell their name. How do you ask?]." Using the monitor, she demonstrated how to fill in the birthday and name of their partner on the worksheet.

The JTE then had the students review the names of the 12 months (from January to December), by saying, "*Tsukino namaewo* [The names of months]. Let's review." She first used laminated sheets with the names of the months plus images. For example, the January card had an image of some traditional new year display. The ALT pronounced the names one by one, putting each card on the board. Students repeated the names. A song from the digital audio-visual material accompanied by the textbook was then played and students were urged to sing along, which they did, but rather reluctantly. The teachers had to encourage them by saying, "Come on! Let's sing together." The JTE also suggested another song the students had practiced. It was a song the JTE had taught them before. The song was simple and short. The students sang the song with her. The students also reviewed ordinal numbers (from first to thirty-first). The GALT led the review with hand-clapping.

The JTE gave the students 10 minutes for the task. She also said, "*Sono shitowa, sensei atode atsumemasu* [I'll collect the worksheets later]. *Atarashii sennseitachito yattahitoniwa*

ekusutora pointowo ageyoukana [I'll give extra points to those who have worked with new teachers]. "Ten minutes. *Dekirudake takusanno tomodachini kikimasho* [Ask as many classmates as possible.] *Minnade zeninno tanjyobiwo atsumete, kurasuno tanjyobi karendawo tsukurimasho* [Let's collect all the birthdays and make a class birthday calendar]," said the JTE. She added, "*Moshi arufabettowo wasuretara ichibanshitani kaitearuyo* [If you forget how to spell alphabet letters, they are written at the bottom of the sheet]," and the students started working on the task.

The students got up, carrying their worksheet, a pencil, and an eraser, found their partners, and exchanged questions and answers. It appeared that everybody understood what they were supposed to do and how to do it. The students had lively interactions. On some occasions, they forgot the question sentences. At other times, it seemed difficult to hear the month and day for each birthday and spell out their names, but students managed with some L1 help. I also participated in the task. When my partner seemed to be having trouble starting a question, I said the first two words, such as, "When is ..." or "How do ...," which prompted the student to recall the whole question sentences. The students I interacted with did not have any trouble saying their own birthdays and their names, letter by letter, but some had difficulty comprehending my birthday, XXXX (month) 9th and spelling out my name. When they had trouble with ordinal numbers, I started counting from fifth, sixth, seventh, eighth, and ninth, and helped students write down the dates correctly in the correct box of the month, sometimes by pointing out each alphabet letter printed at the bottom of the sheet.

After 10 minutes, the JTE asked the ALT to lead the follow-up activity. He asked students how many classmates they had interacted with, or how many names and dates they had collected on the sheet. The ALT said the numbers, starting from "One?" with one finger up, and students raised their hands when their number was announced. When the number came to 10, the ALT said with rising intonation, "More than 10?" The students did not seem to understand the phrase "more than." The JTE jumped in and said, "*Jyuijyono hito iru?* [Are there any students who interacted with more than 10 classmates?]" Since some students raised their hands, the ALT continued counting from 10 to 16. It turned out that one student interacted with as many as 15 other classmates. Each time the students raised their hands, all the teachers, including me, applauded and said such phrases as "Awesome!", "Great!", "Fantastic!", and "Good job!" Students also joined the applause with hand-clapping.

Discussion

RQ 1: How well does the four strands approach help assess students' L2 learning experiences in team-taught elementary English classes?

Meaning-focused input

In the two tasks described in the previous section, students had a good reason, or a particular communicative goal, to listen for the information (Hinkel, 2014). The first task, 'Getting to know a guest ALT' (henceforth, the interview task), was appropriate for the occasion since the students unexpectedly had a guest ALT, and they wanted to know who he was. To know him, they needed to listen to the ALT's questions and the GALT's answers. This want, or necessity, made students attentive to the Q & As; thus, the task was a meaning-focused, real-world task. The second task, 'Making a class birthday calendar' (henceforth, the calendar task) prioritized the information exchange to accomplish a communicative or social goal—i.e., to create a class birthday calendar, in addition to a linguistic goal to practice asking and answering the two target question sentences, "When is your birthday?" and "How do you spell your name?" Students had to receive information from their partners to fill out the grids with birthdays and names of their classmates; thus, they became committed to the interaction to receive meaningful input.

The presence of a new teacher who students wanted to know about and the non-linguistic goal to make a calendar made the input real, or created a real incentive to listen to and understand the input; thus, the two tasks provided meaning-focused input. It is important to note that the appropriate context can make a task authentic and the input meaningful.

Meaning-focused output

In the calendar task, students interacted with their peers and teachers. The task required students to depend on one another for information. Furthermore, they had a real-life goal in exchanging information: to make a birthday calendar by asking classmates and teachers their birthdays and the spelling of their names. The students produced language to attain this real-life goal (Celce-Murcia & Olshtani, 2014); thus, their output was meaning-focused, or for the purpose of communication.

Focus-on-form

There were a few occasions for spontaneous focus-on-form (Loewen, 2018). The GALT used a word that students were not able to identify with the Japanese loan word, *navy*. The Japa-

nese counterpart has three morae while the English word has two syllables. He repeated the word a few times and demonstrated its correct pronunciation, focusing on the correct number of syllables and the diphthong /ei/, and had his students repeat. On another occasion, he made them repeat a word, *Thursday*, with a clear /th/sound at the beginning of the word. In both cases, teaching pronunciation was quite useful (Saito & Lyster, 2012), and the explicit teaching did not thwart the flow since it took only a short time. His spontaneous focus-on-form, or explicit teaching of specific pronunciations, was effective in both cases (Doughty & Williams, 2001). He successfully made the students pay attention to the pronunciation, which tends to be difficult for a specific group of students (Dixson, 2018). At the same time, he did not spoil the flow of the classroom activity in a communicative language teaching context. In addition, his concerns over loan words were quite appropriate since such words generally help vocabulary building, but tend to place an extra burden on both listening comprehension and production (Nation, 2013).

Some students had difficulty recalling the question sentences in the second calendar task. When they reviewed the questions before working on the task, the JTE made a smart move to have them recall the questions in addition to giving them a chance to repeat. She could have provided another opportunity for focus-on-form if she had added something like, *Itsu dakara 'when' de hajimarune* [The question is about 'when', so you will start with 'when', right?] and *Doyatte dakara 'how' de hajimarune* [The question is about 'how', so you will start with 'how', right?]. This kind of spontaneous focus on specific vocabulary items or sentence patterns has been found to be useful in the literature (Loewen, 2018).

Fluency development

The question sentences used in the tasks were not new, as all had been introduced in the textbook over the previous two months: wh-questions with what, when, where, and how. The first interview task was probably the first time all the question sentences were used together on one occasion. The students developed listening fluency, making better use of what they had previously learned. In the second calendar task, students recycled the same two questions they had listened to for comprehension in the first task and repeated the same interactive procedure with different partners more than a few times. In the process, they were under time pressure since their partner was waiting for their response, and they wanted to interact with as many peers and teachers as possible in the set time; thus, the task aimed at fluency development.

To recap, according to the four strands framework, the tasks were communicative and suc-

cessfully provided a balanced learning environment. The L2 input the students received, or experienced first-hand, was contextualized nicely in the classroom discourse, and the students had a good reason to produce output since the classroom pedagogical tasks had a real-life outcome (Celce-Murcia & Olshtani, 2014). The students were provided opportunities to use language for communicative purposes both in terms of perception and production. In fact, the task implementation successfully demonstrated that authenticity resides in specific situations (Zyzik & Polio, 2017), not just in the specific language students are supposed to use in listening and speaking. The language-focused instruction on pronunciation came out of necessity and was on the spot. The spontaneous focus-on-form caught students' attention and yet did not stop the flow of communicative class. The same question sentences were used in both tasks for developing fluency. The abovementioned analyses demonstrated that the four-strand framework was helpful in gauging students' overall linguistic experiences, which were shown to be quite fruitful in this study.

RQ 2: How well do the neuroscientific principles help assess students' L2 learning experiences in team-taught elementary English classes?

Spaced repetition

As mentioned earlier, all the question sentences had already been presented to students in the prior two months. Also, the two questions used in the second calendar task were identical with the two among the seven used in the first interview task. It was pedagogically clever to repeat the same linguistic input from different speakers and in different contexts during one class session. Repetition, especially spaced repetition, helps maintain knowledge in the brain for future use (Brown et al., 2014).

Retrieval

In the second calendar task, some students had difficulty remembering the question sentences from memory although they reviewed them before starting the information exchange task. Effortful retrieval contributes to stronger learning and retention (Carpenter & Agarwal, 2020). When some students could not produce the question sentences and I, as a participant, gave them the first two words such as 'When is ...' and 'How do ...', they were able to remember and speak the full question sentences with ease. This meant that their long-term memories were not solid enough to recall the sentences spontaneously, but some cues helped them to retrieve a weak memory of the sentences and thus, the task functioned as a good retrieval prac-

tice.

The JTE might want to reconsider her method of reviewing the names of the months and the ordinal numbers in the second calendar task. She had the ALT model pronunciation of the month names, from January through December, and the ordinal numbers, from the first through the 31st. Although giving students the chance to repeat the month names for review was beneficial, as it made them feel they knew the terms, some of them could not correctly understand the month or day that they needed when their partners said their birthday. I had the impression that most of the students were able to understand the birth month, but some students struggled in understanding the birth day. More practice for free retrieval of the ordinal numbers would be necessary (Agarwal et al., 2020).

Transfer

As discussed above, the same two question sentences were used in the first interview task and in the second calendar task. The sentences were used in slightly different contexts: one for understanding a new teacher and the other for making a class birthday calendar. To use the same content in slightly different contexts or for different purposes provides an opportunity for knowledge transfer since transfer can be generated by similarity of situations. In one, the input was from the teacher, and in the other from their peers. One was for comprehension to get new information, and the other was both for production and comprehension to make a calendar.

From this transfer point of view, repeating the names of the months, from January through December, and the ordinal numbers, from the first through the 31st, was for rote learning, which does not tend to facilitate retrieval or transfer (Sousa, 2011). For example, although the 12 names of the months are different, they are all names of the months. Similarity exceeds differences. Fluency development practice for random retrieval in slightly different ways such as using cards in one occasion and artifacts in another will be helpful for memory consolidation.

Emotions

Teachers were concerned about the affective state of the students. First, in both tasks, students had already learned all the questions used to interview the new ALT and exchanged information with peers and teachers; thus, the interview was not too difficult for them to follow, and the task did not unnecessarily induce anxiety or negative affect. In fact, all the students seemed to be engaged in the tasks and nobody was left behind in class, as was observed.

Second, in the first interview task, the JTE successfully caught students' attention by delaying his introduction for a while and started his interview task with the utterance, "*Kininatte mashitayone* [You've been curious, right?]. Curiosity, a desire to know, makes people attentive and energizes learning (Leslie, 2014). The JTE set up this task skillfully. The delayed task implementation suggests, most importantly, that we cannot talk about the quality of input without considering the context in which the language is used, and that we also need to consider not just the linguistic quality but the social quality.

Third, the second calendar task was like a language learning game in which students were motivated to try to work with as many classmates as possible during the set period. Games like this task likely motivate students beyond their limits and provide a dynamic learning environment.

To recap, from a neuroscientific point of view, the wh-question sentences had been introduced over the last two months. Repetition was part of the teaching plan. The question sentences were used for listening comprehension in the first interview task and two of the sentences were used for listening and speaking in the second calendar task. In the second task, some students struggled to recall the sentences to use for production. The retrieval task made it harder for them to recall; thus, it was a meaningful learning opportunity. Students practiced the questions for comprehension and production, and in slightly different contexts for interviewing and making a calendar. The practice was meant for free retrieval and transfer of knowledge although students seemed to need more automatic retrieval practices on the question sentences and ordinal numbers. Students also seemed to be enjoying the tasks and the affective side of learning was nicely performed. The four learning principles were helpful to gauging the effectiveness of students' learning.

RQ 3: What are some other factors that can affect the quality of team-taught elementary English classes?

There were some other aspects to be investigated in the observed classrooms. The ALT and GALT used body language and dramatized a model interaction in the second calendar task. When they exchanged a greeting, "Hi, XXXX-sensei!" and "Hi, YYYY-sensei!", they waved their hands. When responding to (3) the favorite sport question, the GALT mimed hitting an attach shot, saying "My favorite sport is (mining) volleyball." Likewise, in responding to (5) the favorite food question, he demonstrated that the food he was eating was quite spicy through his facial expression and then answered, "Kimchi!" with an English accent. Those non-verbal expres-

sions made the teachers' utterances alive—symbolic and emotive. Multimodal information is stronger than mere linguistic information (Bezemer & Jewitt, 2018), and the mind-body-environment plus language relationships should be examined in classroom situations since language learning is inextricably intertwined with the physical and social environment (Atkinson, 2011).

As Tajino and Tajino (2000) and Tajino and Smith (2016) suggested, team-teaching should be effective when all participants—i.e., a JTE, an ALT, and students— establish a small learning community and team-*learn* from each other. Just as the JTE and ALT(s) are teaching partners, peers are learning partners. Their interaction should be viewed not just in terms of input-output, but in relation to cooperation (Jacobs & Kimura, 2013a; 2013b). For example, some students seemed to be struggling with listening to the spelling of their partner's name, while others were patient and gave their partners time to process the sound, and others quickly pointed out the alphabet to their partners in order to interact with as many peers as possible. Teachers could foster an atmosphere that prioritizes learning beyond completing the task or winning the game although it might take time.

Conclusion

This pilot study assessed two tasks conducted in team-taught, fifth-grade elementary English classes to explore students' L2 learning experiences. Both tasks were well-balanced communicative tasks with real-life goals. The tasks showed that since meaning depends on the context, having more than one teacher in a classroom can produce a real context and create a reason to communicate since social goals and linguistic goals cannot be separated. Furthermore, students' learning was likely to be efficient since it involved spaced repetition for memory consolidation, aiming at future retrieval and transfer. Furthermore, students seemed to be fully engaged in the tasks in a positive classroom atmosphere.

Through a thorough examination of the tasks, this study also evaluated the four-strand framework and neuroscientific learning principles as yardsticks to assess students' learning in L2 classes. The results demonstrated that both the framework and principles contributed a great deal to analyzing what was occurring in the classrooms and probably should be used for making suggestions for small but significant changes in classroom teaching practices.

However, it is likely we need more factors to pursue the potential of team-teaching in ISLA contexts such as multimodal learning and collaboration among all classroom participants

in addition to teachers' alternate use of students L1 and L2. Accumulating research in these areas will inform teachers of ways to maximize students' language exposure and help cultivate their linguistic and social experiences in L2 classrooms.

Notes

1. The school principal gave permission to observe the classes, and the teachers agreed to participate in the study. Two written feedback documents, immediate and with detailed suggestions, were emailed to the principal and the JTE.
2. The questions used in the interaction were as follows:
 - “How are you today?”
 - “How's the weather today?”
 - “What day is it today?”
 - “What's the date today?”

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