IRF sequences in team-teaching EFL classrooms

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In classrooms, teachers often ask students known-answer questions (e.g., Schegloff, 2007), students respond, and teachers provide feedback about whether the response was correct. This sequence is often referred to as an Initiation-Response-Feedback (IRF) sequence. IRF sequences are a salient feature of classroom discourse first proposed by Sinclair and Coulthard (1975). In recent years team-teaching has become prevalent across Asia but research which investigates the interactional intricacies of team-teaching (e.g., Aline & Hosoda, 2006; J.-E. Park, 2014) is still rare. This study is one of the first to analyse how IRF sequences are performed in a team-teaching classroom and how teachers in team-teaching classrooms co-manage the interaction with the students before, after and during the IRF sequences. In addition, this study examines the process of speaker selection and the variety of forms the IRF can take, paying close attention to the interactional environment of each IRF sequence.

Keywords: conversation analysis; classroom interaction; team-teaching; IRF sequences

Introduction
In recent years team-teaching in EFL classrooms has become prevalent in East Asia. Studies have investigated the roles of native and non-native teachers in team-teaching classrooms (e.g. Tajino & Tajino, 2000) and have looked at successful cases of team teaching (Carless, 2006). However, research which examines the interactional intricacies of teachers in a team-teaching classroom (e.g., Aline & Hosoda, 2006; Creese, 2006; J.-E. Park, 2014; S. H. Park & Yim, 2009) remains scarce.

The triadic sequence, Initiation-Response-Feedback (IRF) first described by Sinclair and Coulthard (1975), is the most common feature of teacher-student interaction found in the classroom and is often mentioned in research on classroom interaction (e.g., Macbeth, 2000; Walsh, 2011). However, most literature on IRFs in classroom settings focuses on how IRF sequences are accomplished between one teacher and one student or one teacher and a group of students. This study analyses not only how IRFs are performed in a team-teaching classroom, but also focuses on how interlocutors in a team-teaching classroom co-manage the interaction before and after the IRF sequence, from activity initiation to sequence closing and the detailed interaction that goes on in between.

Team-teaching
Team-teaching in EFL classrooms throughout Asia has become prominent. Studies have been conducted, for example, in Korea (J.-E. Park, 2014) and Japan (Aline & Hosoda, 2006), which analyse the intricacies and interactional patterns of team-teaching classrooms. However, no research has specifically focused on the accomplishment of
IRF sequences in a team-teaching classroom. This paper describes research aimed at filling that gap.

In recent years, research regarding the Japanese government's policies about foreign language education and its implications for teachers has been increasing (e.g., Glasgow, 2013; Kikuchi & Browne, 2009). The guidelines of the Japanese Ministry of Education, Culture, Sports, Science and Technology's (2011) Course of Study for Foreign Languages state that "team-teaching classes conducted in cooperation with native speakers, etc. should be carried out in order to develop students' communication abilities" (p.7). However, the roles and responsibilities of the native English-speaking teacher and the non-native English-speaking teacher are not clearly defined. It has been noted that lack of understanding regarding the roles of each teacher, or the lack of experience or training has been the source of problems in team teaching classrooms (Gorsuch, 2002).

Some studies discuss the roles of team teachers (e.g., Carless, 2006; Tajino & Tajino, 2000), but conversation analytic studies which uncover the interactional workings of team-teaching have only recently appeared. J.-E. Park (2014), for example, demonstrates in detail how teachers assist each other in the classroom. She also points out that the non-native English-speaking teacher was in charge of the overall management of the lesson, as well as other actions, such as starting and concluding activities, but that the native English-speaking teacher led entire activities.

Initiation-Response-Evaluation (IRF) sequences
Teachers frequently engage in IRF by asking students known-answer questions (Heritage, 2005; Hosoda, 2014; Lerner, 1995; Schegloff, 2007), to which students respond, and teachers give feedback based on the accuracy of the student's response. IRFs are an important feature of classroom discourse. According to Walsh (2011), the IRF exchange structure is "the most commonly occurring discourse structure to be found in classrooms all over the world" (p. 23). Ohta (1999) examined instances of IRF sequences in teacher-student interaction, and student-student interaction in Japanese language classrooms and reported that the IRF sequences have power in the language socialization of classroom interaction (p. 1495). Similarly, in another study Ohta (2001) reported that “ne-marked” assessments (i.e. assessments followed by the word “ne” which is used to show agreement or emphasise a prior word or sentence) in the third turn of IRF sequences were frequent and explicitly worked as an agreement token to the ongoing interaction, or an affiliation to the talk the student is producing. Nassaji and Wells (2000) argue that the IRF structure has several functions and can take various forms. This paper investigates how IRF sequences are performed in a team-teaching context involving a native-and non-native speaking English teacher”. It also examines the different forms that the IRF can take, detailing exactly what happens before and after as well as between each of the turns in the IRF sequence.

In classroom interaction the teacher often controls the topic and the amount of attention that each student receives, and allocates turns (Erickson, 2004). On occasions where a teacher proceeds with the interaction without providing feedback, Seedhouse (2004) argues that the lack of the F turn (i.e., the feedback part of IRF) implies a positive assessment even though one is not explicitly given. Sometimes sequence-closing thirds, words such as "oh" and "okay," which minimally expand the preceding adjacency pair, occupy the F position in the IRF sequence (Schegloff, 2007). However, minimal responses in classroom interaction sometimes work as feedback and demonstrate the convergence of pedagogical goals (Walsh, 2012). Beach (1993) points
out that "okay" can signal an activity shift. This paper describes not only how IRF sequences are co-constructed between teachers, but also what happens at and after the F position, and how teachers close the sequence or begin a sequence closing sequence. It also explicates how sequence closing sequences are dependent on the nature and goal of the activity.

Method
The data for this study comes from three 50-minute video recordings of Japanese junior and senior high school English classes. Each classroom includes a Japanese English teacher and an assistant language teacher who is a native English speaker. The number of participating students varies from 14 to 40.

The video recorded data was transcribed according to the transcription conventions developed by Gail Jefferson (see Atkinson & Heritage, 1984) and were examined from a conversation analytic perspective. Through repeatedly analysing the transcripts and "unmotivated looking" (Psathas, 1995), some noticeable patterns in the accomplishment of the IRF sequences were identified and distinctions were observed in how the accomplishment of IRF sequences differs between team-teaching classrooms and single teacher classrooms.

Analysis
This section includes extracts from team-teaching classrooms and demonstrates how the teachers deviate from or expand IRF sequences. The deviation is analysed in relation to who initiates the sequence, who provides the feedback after the student response, and who closes the sequence. Three different patterns are discussed for the deployment of IRF sequences in team-teaching classrooms: (a) IRF sequences with same teacher initiation and feedback, (b) collaborative IRF sequences with repair in which one teacher initiates the sequence and the other teacher provides feedback, and (c) collaborative IRF sequences in which one teacher initiates the sequence and the other teacher provides feedback. In the extracts, the non-native English-speaking teacher is referred to as JET, the native English-speaking teacher is referred to as NET, and the students are referred to as S1, S2, and so on.

IRF sequences with same teacher initiation and feedback
This section presents examples of IRF sequences which are frequently seen in traditional one-teacher classroom interaction. The examples demonstrate how one of the team teachers does the “I” (the interaction part of IRF) and the “F” in the IRF sequence and how the other teacher performs other activities in the interaction which prepares the interactional situation for the occurrence of the IRF sequences.

Extract 1 begins with the NET initiating the question-answer sequence by saying, "okay: number six. (1.1) oh sorry number five. did black people enjoy freedom in those days?" S1 self-selects and the JET gives the go ahead in line 05 by saying "hm." S1 gives her answer in line 06 with the utterance "eh: no they didn’t." The NET gives feedback in line 07 by saying "right. no they didn’t", which closes this sequence. In this example, and a few other examples in this paper, positive assessments or assessments which confirm the right answer, can close the sequence. However, Waring (2008) argues that "in classroom discourse, assessment in and of itself does not automatically engender sequence closing" and that "it is a particular kind of assessment that achieves sequence closing" (p. 581). As will be seen in Extract 2, merely an assessment is not
always sufficient to close the sequence. Sometimes the teacher needs to produce further
talk to demonstrate to the students that the sequence is closing.

Extract 1
01 NET: okay: number six. (1.1) oh sorry number five. did black people
02 enjoy freedom in those days?
03 (1.8)
04 S1: I know.
05 JET: hm
06 S1: eh: no they didn't
07 NET: right. no they didn't.

Extract 2 begins with the JET initiating a new activity. In the previous activity the
person who answered the question correctly was able to sit down after receiving
confirmation from one of the teachers. In the new activity, which the JET calls "criss
cross," all of the students stand up and the goal of the activity is to answer a question
correctly and sit down. The student who answers the question correctly can select
whether they allow the people in front of and behind them or the people on both sides of
them to sit down.

Extract 2
01 JET: now uh: criss or cross
02 NET: okay
03 NET: ((writes criss and cross on blackboard)).
04 NET: only me (.). or no?
05 (0.8)
06 NET: only me or no just criss and cross
07 JET: un un un
08 (0.7)
09 NET: okay
10 JET: (( )
11 (1.2)
12 NET: okay so criss (.). cross
13 (1.7)
14 NET: okay: next question. what did black people always have to carry
15 with them
16 (1.2)
17 S1: I know
18 S2: I know
19 S3: I know
20 ((JET points to S1))
21 S1: to black people have to: um (1.4) carry the pass all the time.
22 um
23 NET: the pass right. who should sit down?
24 (0.9)
25 JET: you: uh- uh boys only [boys or two girls
26 SS: ((laughter))
27 S1: cr[oss
28 JET: ((which
29 STS: (laughter))
30 NET: [cross
31 JET: [cross
32 SS: ((laughter))
33 NET: [okay: [so:
34 JET: [not handsome boys?
35 NET: sorry
36 (1.7)
37 NET: okay:
The NET initiates the sequence in lines 14 and 15 with a new question, "what did black people always have to carry with them." After a 1.2 second pause, three students offer responses and the JET non-verbally selects S1, the student who said "I know" first, by pointing at her. After the student gives her answer, the NET partially repeats the answer "the pass right," and then asks, "who should sit down?" in line 23. Contrary to the previous game where the teacher often, but not always, told the student who produced the correct answer to sit down, hence closing the sequence, the nature of the criss cross game requires the teacher to ask the students, "criss or cross?" This, in effect, causes a sequence closing sequence (Schegloff, 2007) to begin. The NET generally manages the IRF sequence and the sequence closing sequence, but after the NET asks "who should sit down" in line 23, there is a 0.9 second silence and the JET reformulates the question in line 25.

In response to the teachers' questions, S1 states, "cross," and it appears as if the NET tries to close the sequence in line 33 by stating "okay." but because her utterance was produced in overlap with the students' laughter, she was unsuccessful. In line 37 she again states, "okay," which closes the sequence and then she moves on to the next question. Waring (2009) calls this "okay" the "teacher's boundary-marking" (p. 806) and Schegloff (2007) states that it "may mark or claim acceptance of a second pair part" (p. 120). The "okay" in line 37 seems to both mark the boundary between the current sequence and the next as well as accept the second pair part, which in this case was the student's answer, "cross."

Collaborative IRF sequences with repair

This section presents examples from team-teaching classrooms in which one teacher performs the initiation and the other teacher performs the feedback which follows repair. The teacher who initiates the repair is the same teacher who provides feedback to the students. The examples in this section reveal that between the sequence initiation and the response there are other things that are occurring that rarely receive attention in IRF literature.

In Extract 3 the NET initiates the sequence by stating, "okay fourth paragraph. (0.8) what was Mandela when he fought against injustices?" Following the NET's question in lines 01 and 02 there is a 3.5 second silence and she then repeats the question. After a 0.9 second silence the NET tries scaffolding in order to help the students to understand what she is asking. A similar phenomenon was noticed by Nystrand and Gamoran (1991) in a single teacher classroom. They state that when a student produced an incorrect or insufficient answer, the teacher restated or rephrased the question. In this example, however, the repetition and rephrasing of the question are done collaboratively by the two teachers. Because the original question is slightly difficult to understand, the NET simplifies the question by asking "what was his job?" in line 06. In line 08, the JET also scaffolds the original question by stating "what was his job? job" and after a 0.5 second silence, she again states "wah: job(h)" in line 10. Then after a 1.1 second silence, S1 self-selects and says, "I know". The JET gives her the go ahead in line 13 and in line 14 the student gives her answer. The student pronounces "anti" as "antee" and the JET corrects her by saying, "anti," placing emphasis on the "i." Although things like pronunciation might be thought to be in the epistemic domain (Heritage, 2013) of the NET, the JET, and not the NET, repairs her mistake, displaying that she is both an English teacher and the main teacher in charge of this particular classroom.
In line 20 the JET says "hm," which is hearable as a confirmation of the student's answer. It is interesting to note that this may be attributed to the fact that the JET repaired the student's pronunciation, so it would be appropriate for her to give confirmation regarding whether the student's new pronunciation is correct or not. The NET gives feedback in lines 22-23 by stating, "RIGHT. he was a lawyer and leader of the anti apartheid." Because the NET does not ask S1, "who should sit down?" as she did in the previous two examples, the JET takes the initiative and asks in line 25 using a different expression, "so you save two: student or (.) (hh) fi(h)ve stu(h)dent?" Asking this question, she continues with the norm they have established in this class and this hints at the JET's orientation to the progressivity of the activity because the activity can move forward once the student providing the appropriate answer chooses who can sit. After the student responds in line 26, the JET, the teacher who initiated the sequence closing sequence, says "oh cri(h)ss. ok so very (.) kind person" and the NET, as seen in all of the previous examples, closes the sequence by saying, "how nice."

Extract 4 is a continuation of the activity seen in Extract 3. It begins with the NET initiating the sequence with "o:okay. next question" in line 01. In her continuation, the NET asks "which was earlier? the freedom of Mandela from prison or the abolishment of apartheid." After providing a 0.4 second wait time for the students, she asks the question again. While the NET is repeating the question, a student, S1, demonstrates his understanding of and readiness to answer the question with "I know" in line 09. He starts answering in line 11 but faces some kind of problem and says "one more please." But before the teacher initiates her turn to repeat the question, other students laugh at his request. The laughter might have been caused because S1 displays his readiness by self-selecting to answer but asks the teacher to repeat the question. During the repetition of the question by the teacher, another student, S2 self-selects and takes a turn and answers with "the freedom." in line 16. The student's production of "the freedom." with final intonation shows that the student takes "the freedom." to be a complete answer.
The JET, however, interprets the answer as an insufficient response and attempts to elicit the complete answer by adding "of?" to the S2 utterance and designing it as an incomplete utterance (Koshi, 2002) letting the student complete it. S2 displays her lack of understanding as to why the teacher treated her answer as insufficient and looks at her worksheet to find the complete answer. The JET acknowledges S2's uncertainty and again provides scaffolding, this time repeating S2's answer with an increment, thus producing another designedly incomplete utterance in line 19 by stating "the freedom (.) of." Finally, S2 provides the answer the teacher intended, "Mandela," in line 20, which the JET accepts with "uhm" in line 21. The NET then provides an assessment and feedback in line 22. Since the activity ends when the student who provided the correct answer chooses who gets to sit, S2 needs to make a decision. As she starts to sit before making her decision, the JET stops her and comments that she always wants to sit. The JET asks her to choose who will sit while making some comments about her options to which the students respond with choral laughter. Once the student selects who gets to sit, the JET receipts (i.e. accepts or acknowledges) with a repetition (Greer, Bussinguer, Butterfield, & Mischinger, 2009) and provides a closure "oh" in line 29. The activity then closes with students producing laughter in chorus in line 30.

Extract 4

01 NET: o:kay. next question
02 which was earlier?
03 the freedom of Mandela from prison or
04 the abolishment of apartheid
05 (0.4)
06 which was earlier
07 (1.2)
08 freedom of Mandela from prison or the abolishment of apartheid
09 S1: I know
10 JET: ( )
11 S1: ah- (0.2) one more ple[ase
12 NET: [one more time
13 STS: (laughter)
14 NET: okay. which was earlier the freedom of Mandela from [prison
15 S2: [I know
16 S2: the freedom.
17 JET: of?
18 S2: ((looks at her worksheet))
19 JET: the freedom (.). of.
20 S2: Mandela.
21 JET: uhm
22 NET: okay. good job. that happened first.
23 S2: ((starts sitting))
24 JET: you always. (0.2) want to: sit down. (. ) not (. ) please choose.
25 JET: so, ( ) or ( )
26 SS: (laughter)
27 JET: (inaudible)
28 S2: criss
29 JET: criss. oh:
30 SS: (chorus laughter))

During this interaction, a deviation from and expansion of the traditional IRF sequence becomes apparent. Usually in IRF sequences with a single teacher conducting the classroom interaction, it is the same teacher initiating, scaffolding, and providing feedback, whereas in interaction with multiple teachers, there are variations to the traditional IRF sequence. In the interaction analysed above, the IRF sequence and the classroom activity occur jointly. The sequence initiation and the feedback in the third-
turn position are performed by the NET. However, other conduct related to student understanding and the ongoing activities are performed primarily by the JET. The NET initiates the question-answer sequence in lines 02-04, repeats the question, and provides feedback after the response in line 22. By doing this, she is basically orienting to the student response. On the other hand, the JET focuses on classroom management and the progressivity of the activity. She also provides scaffolding to the students to guide them to the teacher’s intended response with the production of designedly incomplete utterances. In this way, this example demonstrates how the NET seems to be fixed to the IRF structure, whereas the JET expands the structure in order to maintain the progressivity of the interaction.

**Collaborative IRF sequences**

Instances presented so far are of the same teacher initiating and providing feedback and instances in which the teachers collaborate to perform the IRF sequence when repair occurs. However, the team-teaching classroom interaction also contains IRF sequences which are performed by both teachers even when there are no apparent problems with students' utterances.

Extract 5 shows the NET initiating the IRF sequence and the JET providing feedback after the student response. The NET initiates the sequence with a question "what is the date today." The question was asked to all of the students and the JET gives the students the go ahead in the form of clapping, which provides a rhythm for students' collective response. Then, for the student response, the JET provides the feedback turn with "okay, good." Distinct from the instances discussed earlier, this example represents the collaboration of the two teachers in performing a clear IRF sequence. Extract 6 demonstrates a similar pattern.

**Extract 5**

01 NET: okay. what is the date today.
02 JET: ((clap clap))
03 SS: its july the seventeenth.
04 JET: okay, good.

In Extract 6, the NET initiates the sequence and the JET performs the feedback. The NET initiates the sequence with a question "and how is the weather today." in 01 and the JET prepares the rhythm and allocates the answering time with a double clap. The students respond as a group and the JET provides the third-turn feedback. This demonstrates the two teacher's collaboration in the performance of an IRF sequence.

**Extract 6**

01 NET: and how is the weather today.
02 JET: ((clap clap))
03 SS: its sunny and hot.
04 JET: very good.

**Discussion**

This study examined how IRF sequences are performed by teachers in team-teaching classrooms. It highlighted not only how IRF sequences are accomplished, but also what happens before, after, and between each turn in the IRF sequence. It identified ways in which teachers in a team-teaching classroom perform different classroom roles which surround the IRF sequence, such as management of the classroom, the initiation of an activity, turn allocation, scaffolding, repair, and so on. An analysis of the data revealed
that the JET seemed to be in charge of the overall management of the classroom and oriented to her role as the teacher in power in the classroom, which was made evident when she repaired student mistakes, allocated who spoke, and managed the progressivity of the activities in the lesson. The NET was more focused on performing the canonical IRF sequences by producing questions and evaluating answers. The JET always initiated a new activity which prepared the floor for the NET to initiate the question-answer sequence regarding the key points of the lesson.

Furthermore, within the analysis of the base IRF sequences, two distinct patterns were found: the native English-speaking teacher undertaking both the initiation of the sequence and the provision of feedback, and the native English-speaking teacher initiating the sequence and the non-native English-speaking teacher providing feedback. The former pattern resembles the IRF sequences often seen in traditional single-teacher classrooms where the same teacher initiates the sequence and provides feedback. In the second pattern two varying structures can be seen. In the first type, which was often observed in the junior high school data, the NET initiates the sequence and the JET provides feedback. An analysis of several IRF sequences in the junior high school data demonstrated that the co-construction of the IRF sequence was planned in advance as both of the teachers take turns to collaboratively perform the initiation and feedback. In the second type, the NET initiated the sequence and the JET gave the feedback. An analysis of the data revealed that the JET’s feedback was made necessary by what the JET did in the proceeding sequences. The JET provided feedback when there was an apparent problem in student utterances and she entered the IRF sequence to explicitly initiate repair. Since, the JET initiated repair, the repair sequence needs to be closed by her by accepting the repair, which she did in the feedback turn. Her feedback turn was also made relevant when she stepped in to scaffold questions and assisted student understanding.

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