Joint Initiation and Joint Feedback: Connecting Collaboration with Pedagogy in Co-teaching

Allie Hope KING[*]

ABSTRACT: How teachers ask questions and give feedback to student responses is an age-old topic that pervades educational research, especially empirical work that examines classroom interaction. Focusing on the understudied context of co-teaching, and a virtually unexamined dynamic with two teachers with equal roles and skills sets, this study looks at how co-teachers can jointly accomplish the initiation and feedback work in IRF sequences. Two collaborative practices, *joint initiation* and *joint feedback,* are identified and described in context. The discovery of these practices reveals that co-teachers with equal roles can jointly occupy not only the same IRF sequence, but also the same component of the sequence. Beyond uncovering some interactional characteristics of this type of collaborative interaction, the findings of this study also carry important implications for pedagogy. First, the instances of *joint initiation* show how co-teacher collaboration can enhance the progressivity and the pedagogical effectiveness of question-answer exchange during instruction. Second, the practice of *joint feedback* reflects some of the distinct advantages of having two instructors in one classroom, which include making feedback more salient for learners, creating more opportunities for one-on-one teacher-student interaction, and increasing the likelihood of spotting and addressing problems in student understanding.
Keywords: co-teaching; Initiation-Response-Feedback; IRF; conversation analysis; classroom discourse

1. INTRODUCTION

How teachers ask questions and give feedback to student responses is an age-old topic that pervades educational research, especially empirical work that examines classroom interaction. Seminal classroom discourse research (e.g., Cazden, 2001; Mehan, 1979; Sinclair & Coulthard, 1975; Wells, 1993) has revealed that teachers asking questions is not only one of the more ubiquitous phenomena in classrooms, the practice is also commonly done as part of the three-part sequence known as Initiation-Response-Feedback (IRF).

To date, most analyses of IRF have focused on single-teacher classrooms. How the sequence is done in co-teaching contexts, where two teachers collaborate during instruction, has received far less attention. Examining IRF in the co-teaching context is important for a couple of reasons. First, the presence of a second teacher creates an added complexity where turn-taking is concerned, so how two people might co-manage the teacher turns in the sequence is a relevant question. Second, much interdisciplinary research suggests that co-teaching enhances learning, but little work has tried to connect this claim with actual analysis of co-teacher discourse. In an effort to fill these gaps, this paper will use the detail-oriented lens of conversation analysis (CA) to investigate how teacher-initiated questioning is done in one co-taught classroom. Specifically, the analysis will show how two teachers work jointly to accomplish the initiation and feedback work in IRF sequences in ways that both facilitate the execution of the sequence and enhance the pedagogical value of the interaction as well.

2. LITERATURE REVIEW

Co-teaching is a popular instructional approach in a number of contexts for a variety of reasons. In primary and secondary inclusion classrooms, for instance, the pairing of teachers with different backgrounds (e.g., a special education teacher with a subject teacher) is believed

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[*] Doctoral student in Applied Linguistics at Teachers College, Columbia University, New York, USA. e-mail: ahk2151@tc.columbia.edu (ORCID: 0000-0002-4776-9760)

to better meet the educational needs of a diverse or blended group of students (Friend, 2008). Even in some classrooms with a more homogeneous student population, stakeholders similarly contend that co-teaching can engender a superior learning environment for students. For example, in English as a foreign language (EFL) classrooms, collaboration between a native English-speaking teacher and a local English teacher is thought to provide "higher quality" instruction because the local teacher's familiarity with students' culture and native language can complement the cultural and linguistic expertise of the native English speaker (Lee, 2016). Prior research examining co-taught contexts has suggested that having an additional teacher present leads to better pacing and sequencing of lessons, and also increases the opportunity for individualized instruction (Armstrong, 1977). Moreover, researchers have empirically linked co-teaching to enhanced learner skills, increased test scores, and a generally improved learning environment (Nunan, 1992). In sum, there are a number of indications found in the literature that co-teaching has the potential to enhance learning for students in a variety of classroom settings.

The handful of CA studies that examine co-teaching (e.g., Aline & Hosada, 2006; Butterfield & Bhatta, 2015; Lee, 2016, 2017; Park, 2015) have all focused in some way on *participation structures*, or the nuanced ways teachers participate in and adhere to various aspects of turn-taking protocols in interaction (Bloome, Carter, Christian, Otto & Shuart-Faris, 2005). Unsurprisingly, three of the five aforementioned studies were concerned with how the well-known IRF sequence is done in a collaborative context. Looking at a native English-speaking teacher and a local English teacher co-teaching in Japan, Butterfield and Bhatta (2015) found *co-constructed* instances of IRF in which one teacher does the initiation move and the other does the feedback move. While the authors attributed this in part to a pre-planned arrangement to alternate roles in an activity, they also found the non-initiating teacher's participation in the feedback move was at times related to her linguistic strengths and superior ability to address problematic second-turn student responses. Lee (2016, 2017) has also looked at IRF in co-taught EFL classrooms with a native English-speaking teacher and a local English teacher co-teaching in South Korea. In her earlier study, Lee (2016) demonstrated that sometimes the non-initiating teacher would occupy the second-turn response move of the sequence, a place that is usually reserved for students. She asserted that this unique participation pattern had pedagogical value, as the teachers used it to model proper responses or authentic interaction in English for students. In her more recent study, Lee (2017) found that co-teachers could actually occupy the same component of a sequence. More specifically, both teachers participated in the initiation move in either adjacent or overlapping turns. In either type of co-initiation, the teachers used slightly different means (e.g., distinct stance, or different language) to achieve the same interactional goal–to effectively elicit student responses. Lee argued that collaborative initiations served to both encourage and re-focus student participation, and generally reflected the teachers' mutual orientation to shared objectives. In sum, the handful of CA studies that have looked at co-teacher interaction have revealed participation structures that are distinct from those in single-teacher classrooms. In particular, this research suggests that the IRF sequence that pervades classroom discourse can unfold differently when there are two teachers, and some of these distinctions may carry the potential to enhance student learning.

Prior CA literature on co-teacher interaction has described contexts in which the instructors have distinct roles and skills sets. By looking at interaction in a classroom where the teachers share equal roles and training, this study will contribute both to research on co-teaching, as well as to the literature on IRF sequences in classroom discourse.

3. METHOD

3.1. Context and Participants

This study was conducted in a graduate-level course on discourse analysis at a university in the Northeastern part of the United States. The participants were co-teachers Caitlyn and Sandra, and their 24 graduate students, including myself as a participant observer.

The two teachers were seasoned doctoral students in the department offering the course. They had co-taught this particular class twice prior to the semester at hand, and they had also worked and socialized together in a number of other contexts during their time at the institution. Caitlyn and Sandra held equal roles, rights, and responsibilities in this classroom, but sessions varied in terms of which instructor did what. Sometimes, they equally shared the responsibility of teaching the day's material, freely and fluidly alternating to cover various points throughout the lesson. Other times, one instructor was the "lead" for a particular topic, while her partner played a more secondary role. However, even during these more clearly divided points in instruction, the non-leading teacher's role still involved jumping in at will to supplement her colleague's lecture.

The students were all graduate students who varied in age, as well as academic background. While most were affiliated with the department that housed this discourse analysis course, a few were from outside programs.

3.2. Data Collection and Analysis

Two class sessions comprising nearly three hours were video-recorded during the fifth and sixth weeks of the semester. Two video cameras were arranged on either side of the classroom to capture as much of the teachers' verbal and nonverbal behavior as possible. Due to permission restrictions for the project, only audio data were collected for the student talk. To ensure the accuracy of these data, handheld digital audio-recorders were placed around the classroom.

The video data were transcribed in their entirety according to Jefferson's (2004) conventions[†], and then analyzed using CA, a micro-analytic framework that employs turn-by-turn analysis to examine and explain the intricacies of naturally-occurring interaction. The CA method of dissecting interaction in terms of speaker turns helps delineate and distinguish the work each participant is doing within any co-occupied space in the interaction. However, rather than looking at interaction as a series of individual acts done by different speakers, CA maintains the perspective that interaction is an *emergent, collectively organized event* (ten Have, 1999). Among other things, this means that central to analysis is the goal of uncovering participants' own orientation to the interaction (Waring, 2008), which is achieved by examining how prior talk is treated by participants in subsequent turns. The attention to the intricacies of the interaction as well as the consideration of participants' orientation to each other's talk that are inherent to the method of CA make it a uniquely fit analytical framework for examining how two instructors navigate around and collaborate with each other while teaching.

Because my overall interest lies in understanding how two co-teachers with equal roles in the classroom negotiate interaction *together*, I began my analysis by looking for moments during which both instructors contributed in close proximity to each other in the interaction. There was an abundance of this type of moment since these instructors were typically both "on" and participating actively throughout the class sessions. For the present study, I focused on collaboration around question-answer sequences. Classroom discourse research has often considered the examination of question-answer exchanges between teachers and students as central to an understanding what both teaching and learning look like, so it is particularly relevant to ascertain how *two* teachers manage such exchanges. I examined the data for all

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[†] See Appendix A for transcription conventions

instances of question-answer sequences, and then analyzed each instance according to CA principles. After my preliminary analysis of this collection revealed some instances in which the teachers were co-occupying the same three-move IRF sequence, I narrowed my focus to this particular type of sequence to uncover how, precisely, the teachers were co-managing this specific sequential event.

4. FINDINGS

In the nearly three hours of interaction that comprise the data set, it was actually far more common in this graduate seminar for questions to be asked by student participants than it was by the two instructors. Teacher-initiated question-answer sequences most typically occurred when one teacher was the "lead" for a more lecture-style segment of a lesson, and these instances were often three-turn IRF sequences between that teacher and one or more students. Nevertheless, some question-answer sequences were also found when Caitlyn and Sandra were both "on" and collaborating during instruction, and some of these also took the IRF form. Upon close analysis of these instances, it emerged that IRF could unfold in some unique ways as a result of the two-teacher dynamic.

In the analysis that follows, I will provide examples of two collaborative practices that were discovered for managing IRF sequences in this classroom. The first section will describe two instances of *joint initiation*, wherein the co-teachers work jointly to complete the initiation work in an IRF sequence. The subsequent section will describe three examples of *joint feedback*, wherein the co-teachers jointly offer the feedback in IRF sequences.

4.1. Joint Initiation

On a couple of occasions in the data set, the co-teachers jointly participated in the initiation or elicitation component of the IRF sequence. The first instance takes place just after the instructors have given an initial overview of the concepts *locutionary* and *illocutionary* speech acts. On the projected PowerPoint slide are some example utterances, and the task is for students to identify the two speech acts for each sentence. The first example sentence is "I brought chocolate."

Extract 1: What is the Locutionary Act?

[Caitlyn (C); Sandra (S); Collective Students (SS)]

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01    C:              so I had a hard couple weeks.=rough start to the semester,
02                    and I walk in and Sandra says, (0.6) I brought chocolate.
                      ((4 lines omitted))
07    C:       →      um::: so. (.) what is the ((gestures to slide))-locutionary act here.
08                    (3.0)
09    Stu?:           °(                    ) °
10    S:       →      °okay?° so what is- what is the actual meaning of that. (.)
11    Ann:                                          [°statement°]
12    C:              ((arm gesture toward Carleton at back))-[$I THINK ] YOU HAVE IT
13                    CARLETON?$
14    Car:            I brought chocolate.=
15    C:              [=$RI:GHT$.=
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The students were already aware (and she reminds them just prior to the instance) that Caitlyn's dog had recently died. It is in this context that the students are presented with the sentence "I brought chocolate." It is revealed in the omitted talk that follows line 02 that this was the very first thing Sandra said upon seeing Caitlyn in their office prior to class. Caitlyn's initiation move in line 07 calls for students to identify the locutionary act of Sandra's comment.

The elicitation is unsuccessful, as indicated by a notable three-second silence (line 08) and one indecipherable student comment (line 09). Sandra then steps in at line 10 with a reformulation of Caitlyn's question that abandons the technical term "locutionary" and invites students to simply think about the "actual meaning" of the utterance instead. This approach is effective at eliciting responses. Annie provides one interpretation in line 11 (although it is not taken up by either teacher, which suggests it is either not heard due to overlap or not accurate), and Carleton, after bidding and being nominated in lines 12-13, correctly identifies the locutionary act: it is the literal meaning of the sentence, that Sandra brought chocolate to office hours. Carleton is given a positive evaluation by Caitlyn in line 15, and the IRF sequence is complete.

This is the first example of the teachers doing the collaborative practice of joint initiation. As we know from research in single-teacher settings, when an initiation move fails to garner sought-after student responses, the teacher can extend the sequence by revisiting the initiation content and using an elicitation strategy to facilitate understanding (Mehan, 1979). Here, the instructors divide the labor of doing the initiation work within such an extended sequence. Caitlyn does the initial inquiry and, when students fail to provide satisfactory responses in the second turn, Sandra does the subsequent work to extend the sequence with an elicitation simplification (Mehan, 1979). Her re-initiation "what is the actual meaning of that" seems to be more accessible to the students as it results in an adequate response, which moves the sequence forward.

Whereas the first instance of joint initiation helps to solve the issue of lack of student response, the second instance plays a facilitative role during an IRF sequence in which multiple inadequate responses follow a teacher initiation. Here, the practice again involves a simplified re-initiation in which a technical term is replaced with everyday language, but this time Sandra also assists students by giving them a counter-example that demonstrates what the accurate response is *not*. This moment takes place immediately after the prior instance, and the class is still looking at the sentence "I brought chocolate."

Excerpt 2: What is the Illocutionary Act?

			((5 lines omitted))
20	C:		so that's the *((gestures to slide))*-<u>locutionary</u> act.
21			(0.8)
22		→	what is the *((gestures to slide))*-<u>ILLocutionary</u> act of that.
23			(0.2)
24	Janie		comfort and [condolence,]
25	Stu2:		[comfort (syl)]
26	Stu3:		[(syl syl syl)]
27	S:		*((stands))*-what is it?
28	C:		okay I $hear pshhh >>blulula<<.$
29	SS:		hehehehe
30			(0.2)
31	C:		so:::,
32	Stu4:		showing sympathy?
33			(0.5)
34	Stu5:		infor[ming.]
35	C:		[>I'm sorry] who- who-< somebody? hehe
36			(0.5)
37			<u>JANIE</u>.
38	Janie:		comforting or condolences, (0.3)
39			[or showing sympathy as ( )]
40	C:		[*((squinting eyes, gazes at S))*-mmm::::::, *((shaking hand gesture))*]
41	S:	→	*((scrunches face, gazes at C))*-well? *((gazes at SS))*-tch ↑>what do you
42		→	think- wh- if I- am I <u>announcing</u> that to Caitlyn, (0.3)

43		→	oh by the wa:y, I brought chocolate? >and she says<
44		→	*((raised hands gesture and shrug))*-↑oh <u>how </u>nic:e,
45	SS:		hehehe
46	S:	→	or is it something else that [I'm=]
47	C:		[*((big arm gesture to Stu1))*]
48	S:	→	[=actually::,]
49	Stu6:		[you're offering]

The instance begins with Caitlyn closing the locutionary act topic in line 20. Her subsequent initiation move in line 22 invites students to now identify the *ill*ocutionary act of the already familiar "I brought chocolate." Following her inquiry, a barrage of student responses ensues (lines 24-26, 32 and 34) in which a number of guesses (e.g., "comfort and condolences," "showing sympathy," and "informing") are called out for the illocutionary act. After this somewhat chaotic moment comprised of both multiple overlapping student turns and a handful of distinct answers, Caitlyn communicates implicitly in line 28 using a non-lexical vocalization that she cannot decipher any of the responses when multiple voices are speaking at once.

Putting an end to the overlapping talk, Caitlyn nominates Janie in line 37 to take the floor. Janie submits that the illocutionary act of "I brought chocolate" is to offer comfort, condolence, or sympathy. Both teachers respond to this attempt with various forms of negative feedback (e.g., Caitlyn's shaking hand gesture in line 40 and Sandra's scrunched facial expression in line 41), suggesting this was not the answer they were after. Sandra then proceeds to revisit the initiation effort, another indication that Janie's response is being treated as problematic.

Similar to the first instance, Sandra addresses the unsatisfactory student responses by extending the initiation component of the sequence in a way that facilitates understanding and drives the sequence forward. Using a counter-example in lines 41-44, Sandra proposes what "I brought chocolate" is *not* doing—merely announcing that she brought chocolate but then not sharing it with poor Caitlyn. Her humorous use of constructed dialogue (Tannen, 1989/2007) to voice Caitlyn's hypothetical reaction "oh how nice" communicates that announcing or "informing," which seems to target one utterance (line 34) in the barrage of student responses, are not guesses that align with the earlier explanation for the illocutionary act. Sandra then uses a simplification strategy (lines 46 and 48) like she did in the previous excerpt, avoiding the technical term "illocutionary," and this time explicitly guiding the students to consider the "something *else*" that she is "actually" doing with her talk. Her tactics of simplifying and redirecting students away from their prior guesses prove to be successful as one student's response in line 49 demonstrates: the illocutionary act is *offering* the chocolate to Caitlyn.

The two examples of joint initiation show that, when one teacher's initiation move is not met with successful responses, the second teacher may step in to expand the sequence in a way that assists student understanding and drives the sequence forward. Quite interestingly, Sandra's use of a simplification strategy in both instances suggests that students may not have been familiar enough with the terminology to respond to Caitlyn's inquiries in the manner they were asked. This is perhaps because the concepts of locutionary and illocutionary speech acts had been introduced only moments beforehand, yet Caitlyn's questions and, more importantly, the kind of response they called for providing, required students to be comfortable with these new terms. In this regard, the practice of joint initiation reveals what seem to be two slightly different in-the-moment perspectives between the teachers about what the students are ready to do with the new material.

4.2. Joint Feedback

Whereas the phenomenon of joint initiation occurred infrequently in the data set, the practice of joint feedback was more common. The instances examined here show how the co-teachers can work together to accomplish the feedback component of IRF sequences in a variety

of ways. Three distinct cases of joint feedback will be described: 1) co-teachers giving the *same* feedback to the *same* student; 2) co-teachers giving the *same* feedback to *different* students; and 3) co-teachers giving *different* feedback to the *same* student.

The first instance will revisit Extract 2 above, and will consider the feedback that is given after Janie attempts to identify the illocutionary act of "I brought chocolate."

Extract 3: What is the Illocutionary Act? [Same feedback, same student]

37	C:		<u>JANIE</u>.
38	Janie:		comforting or condolences, (0.3)
39			[or showing sympathy as ( )]
40	C:	→	[*((squinting eyes, gazes at S))*-mmm::::::, *((shaking hand gesture))*]
41	S:	→	*((scrunches face, gazes at C))*-well? *((gazes at SS))*-tch ↑>what do you
42			think- wh- if I- am I <u>announcing</u> that to Caitlyn,

As we already know, Janie's comment in lines 38-39 is problematic. The focus here is how the co-teachers collaboratively respond by jointly offering negative feedback. Immediately after Janie's response, Caitlyn provides negative feedback by doing a dramatically elongated "mmm," squinting her eyes, and doing an "iffy" or "so-so" hand gesture. Sandra also gives negative nonverbal feedback by doing a "scrunched" facial expression, her go-to facial expression that accompanies mitigated talk. The coordinated effort in lines 40-41 is the first example of joint feedback, in which the co-teachers both provide an evaluation of Janie's response. The predominantly nonverbal feedback is implicit, yet the collaboration makes it salient—since Janie can see not one but *two* teachers gently communicating that her response is unsatisfactory, it is likely that she receives this message clearly.

While joint feedback can work to make one individual's evaluation potentially more visible, the practice can also enable co-teachers to manage competing voices and evaluate multiple students at once. The next instance takes place in a continuation of Extract 3. After Janie's unsuccessful attempt, Sandra pursues a more fitting response for the illocutionary act of "I brought chocolate," and the students eventually display the sought-after understanding.

Extract 4: What is the Illocutionary Act? [Same feedback, different students]

40	C:		[*((squinting eyes, gazes at S))*-mmm::::::, *((shaking hand gesture))*]
41	S:		*((scrunches face, gazes at C))*-well? *((gazes at SS))*-tch ↑>what do you
42			think- wh- if I- am I just <u>announcing</u> that to Caitlyn, (3.0)
43			oh by the wa:y, I brought chocolate? >and she says<
44			*((raised hands gesture and shrug))*-↑oh <u>how</u> nic:e,
45	SS:		hehehe
46	S:		or is it something else that [I'm=]
47	C:		[*((arm gesture to a student across room))*]
48	S:		[=actually::,]
49	Stu1:		[you're offering]
50	Stu2:		offering.
51	S:	→	*((facing forward, nodding vigorously))*
52	Stu3:		o::::::h
53	Janie:		oh <u>offering</u>.
54	S:	→	[{*((gazing forward, nodding))*-(don't you think) I'm offering?}]
55	C:	→	[{*((arm out diagonally))*-] [you wanted to say the same thing? (.)]
56	S:	→	[↑right?]
57	C:	→	[<u>OFFERING.</u>]

Sandra's *well*-prefaced turn-beginning in line 41 displays disagreement (Pomerantz, 1984) with Janie's prior talk, which verbally extends the more implicit negative feedback that was

already given. Interestingly, however, Sandra breaks her gaze with Janie to do a visual check-in with her co-teacher, and then looks forward at the class. This suggests the negative feedback might now be directed at the group of students, many of whom had also called out responses during the earlier spate of overlapping talk. As described in the first section above, Sandra goes on to give a counter-example and a simplified re-initiation. This works well, and the students, including the previously confused Janie, now align in identifying a new guess, "offering," as the illocutionary act of the utterance. However, having directed the reformulated question to the whole group, Sandra's inquiry draws multiple correct responses from several students in short succession (lines 49, 50, and 53). Upon hearing "offering" from a couple of students in front of her, Sandra nods vigorously (line 51). As more uptake becomes audible around the room, Sandra continues her positive feedback with nods and a verbal confirmation (line 54). At the same time that Sandra gives feedback to responses from students in front of her, Caitlyn gestures diagonally across the room (line 55) and calls on another student who had apparently bid to respond with the same answer. Although this student contribution is not clearly discernible on the recording, Caitlyn's animated positive feedback with loud volume and heavy stress on "offering" (line 57) suggests someone on that side of the room is on the right track as well. Here, the coordinated effort between the instructors enables them to give the same positive feedback to several students at once in a way that might increase the feel of individualized interaction for students during a moment of competing voices.

The examples thus far show the instructors doing the joint feedback practice with the same type of feedback: in Extract 3, they both give *negative* feedback to one student (Janie); in Extract 4, they both give *positive* feedback to multiple students who are producing the same appropriate response. In the final example, however, we find the co-teachers each giving *different* types of feedback (negative *and* positive), but to the *same* student. In this instance, the class is talking about Grice's Cooperative Principle. Sandra has just asked the students to explain the concept using their own words. After one student provides his response, Sandra calls on Mary to give it a try.

Extract 5: The Cooperative Principle [Different feedback, same student]

01	S:		okay? *((gestures to Mary))*-what would you <u>add</u>.
02	Mary:		yeah. like a- a set of, (.) cultural maxims that [imp]licitly=
03	S:	→	[*((slight nod))*]
04	Mary:		=kind of (.) in<u>form</u> how a conversation happens and
05			how a conversation happens in either, [(0.2) party.]
06	S:	→	*((nods))*-[mhmmm]
07	Mary:		both speaker and listener.
08	S:	→	mhmm? °yeah.° *((scanning students, opens mouth))*
09	C:	→	*((off screen))* does [he tie it to] <u>cultu:re</u>,
10	S:	→	[*((gazes at C))*] *((gazes at Mary))*-he does <u>not</u>.
11	C:		right.[(okay)]
12	Mary:		<u>oh</u>. [( )]
			((5 lines omitted))
18	C:	→	=he ne- [yeah. he never really-] [he doesn't talk about that.]
19	S:	→	*((shaking head))*-[he- he- he doesn't]
20	Mary:		[maybe he doesn't say that.]
21			okay that was my interpretation.
22	S:		*((nods))*-mhmmm,
23	C:	→	no NO but it is a <u>good</u> one [because [of <u>course</u> ( ]]
24	S:	→	[{*((nods))*-[it's a good question. yeah.}]

In line 01, Sandra elicits Mary's interpretation of the Cooperative Principle. As Mary responds (lines 02-07), Sandra nods (lines 03, 06) and a does an affirmative backchannel

"mhmm" (line 06). After Mary has completed her turn, Sandra's "mhmm" and sotto voce "yeah" subtly convey a positive evaluation of the response. Sandra promptly begins to scan the room (line 08), seemingly looking for additional students to contribute with their own explanation. However, precisely when she appears to be closing the IRF sequence with Mary and opening her mouth to move on, Caitlyn takes the floor (line 09). Posing the question "does he tie it to culture," Caitlyn targets and problematizes Mary's line 02 implication that the Cooperative Principle is a "set of cultural maxims." She is off screen, so where Caitlyn is looking and who her question is intended for are uncertain. Nevertheless, it is Sandra who responds by announcing that, in fact, Grice does *not* talk about culture. Regardless of the intended recipient, Caitlyn's question does a number of important things. First, it stops Sandra from potentially closing the IRF sequence and moving on to select another student to speak. Second, it reopens the feedback part of the sequence by putting focus back on Mary's prior contribution and teasing apart some of the details of the student's response. Third, it provides negative feedback to Mary's response by explicitly calling into question part of its contents. Finally, and most remarkably, it changes the nature of the feedback Mary receives, shifting it from the generally affirmative evaluation that Sandra's nods, "mmhmm," and "yeah" had conveyed to a negative evaluation that is communicated through Caitlyn's question and, subsequently, the response it incites from Sandra.

Following Caitlyn's question and Sandra's response, an "oh" token in line 12 from Mary acknowledges the co-teachers' negative feedback. In the omitted talk, Sandra asks if other students are also "wondering about culture" and, when they confirm they are, she promises they will examine this topic later. In lines 18-19, both instructors reiterate the point that Grice did not examine culture in his work. Mary then confirms her understanding through repetition of the teachers' prior talk (line 20), and then classifies her response as "[her] interpretation" (line 21). Both Caitlyn and Sandra recognize this possibly defensive comment by giving emphatic positive joint feedback (lines 23-24) recognizing that, while Mary's response was not entirely accurate, it was valuable because it raised a good question.

While this example of joint feedback once again shows how two instructors can cooperatively accomplish the feedback work in an IRF sequence, that they each give distinct and seemingly conflicting feedback to the same student is extraordinary. When Caitlyn steps in to question the response that has already received a positive evaluation from her colleague, her actions lead to reshaped feedback content that is more informative and comprehensive. This turns out to be significant since it is revealed that other students have been wondering about this same issue of culture during the discussion of the Cooperative Principle. If the sequence had been closed and Sandra had moved on to another student, misconceptions might have gone unaddressed. Caitlyn's supplement therefore brings an important contribution to the table, one that is arguably fundamental for student learning *at that moment*.

5. DISCUSSION

As Waring (2009) points out in an analysis of the sequence in a single-teacher context, the machinery of IRF may become relaxed, and turn-taking practices may even be reorganized, within a particular educational context. The present study supports this point, and demonstrates that IRF sequences can unfold in different ways when there are two teachers. The analysis has shown that co-teachers can collaborate in a phenomenally fine-tuned fashion, co-participating in both the initiation and feedback components of the sequence and accomplishing together what one individual does in a single-teacher context. On one level, these findings are important as they corroborate prior research that has found distinct participation structures in co-teaching, namely that two teachers can not only jointly occupy the same IRF sequence (Butterfield & Bhatta, 2015), but they can also jointly occupy same component of the sequence (Lee, 2017). The practices described here, however, extend these earlier findings in a couple of ways. First,

unlike co-teachers in EFL classrooms who have notably distinct roles, the teachers in the present data have equal roles and, as mentioned, are both eligible to speak at any point in the interaction. To jointly occupy the same component of a sequence is impressive given the precise coordination and other-awareness it takes to co-manage the sequence in a way that does not end up with the sort of overlap that might be oriented to as an interruption, or that causes confusion for the learners. This particular revelation lends to a better understanding of not only how crucial it is that co-teachers listen to and make an effort to adapt to each other during this type of joint activity, but also of the fact that collaboration in this context begins on the turn-taking level. Second, the present study reveals that co-teachers may co-occupy the feedback component of an IRF sequence, a phenomenon which, as I have shown, can further unfold into a number of distinct participation structures.

The coordinated maneuvers that comprise joint initiation and joint feedback are even more remarkable, however, when considering how the two practices might contribute pedagogically to the classroom discourse. In the instances of joint initiation, for example, we see two teachers using distinct slightly different approaches to asking the same question. Caitlyn utilizes recently introduced terminology in both of her inquiries, which creates an opportunity for students to become familiar with new material by hearing it used in context. Yet, the unsatisfactory responses that ensue indicate it might be too soon for students to handle questions constructed around the new terminology or to apply the concepts right away to a real-world example. Sandra's approach, however, frames the inquiries similarly in function, but in everyday language. This seems to help students arrive at a place of understanding, which in turn enables them to better think about the sentences in the task, and complete the second turn properly. In this way, Sandra's extension of the IRF sequence not only adds to the pedagogical value of the question-answer exchange, it also contributes to the progressivity (Schegloff, 2007) of the sequence and the larger activity by providing students with the additional resources they need at that time. Overall, the instances of joint initiation described here show how the practice enables the instructors to combine the benefits of slightly different tactics during question-answer exchanges in a way that engages students with new material, yet guides them through the challenges of applying concepts in their responses. We know that this is a common interactional trajectory in a single-teacher classroom—a teacher elicits a student response, but it is an unsuccessful attempt, so she revisits the initiation move until the sought-after response has been received (Mehan, 1979). However, here, *two* teachers make a united effort to prompt a successful response. And, while we cannot know the cognitive experience of the teachers during this process, it is interesting to consider the notion that the teacher who speaks second in the joint initiation practice has the unique benefit in this two-teacher dynamic of being an observer of her co-teacher's unsuccessful elicitation. As a listener, she may be afforded some cognitive advantage in the task of rephrasing the elicitation effectively that an instructor in a single-teacher context would not have.

The practice of joint feedback also reflects some potential pedagogical advantages of having two instructors. Prior researchers looking at IRF (e.g., Lee, 2007; Tharp & Gallimore, 1988; Wells, 1993) have highlighted the importance of the feedback move for student learning, and have even gone so far as to identify feedback as one of the "major mechanisms for assisting learners" (Tharp & Gallimore, 1988, p. 45). In light of the various ways joint feedback has been shown to work in this data set, the practice appears to provide concrete evidence that co-teaching can enhance the learning environment for students. When both instructors are "on" and give the same feedback to one student's response, what is essentially implicit, nonverbal feedback becomes more visible, arguably making it more salient for that recipient and even for others in the room. When multiple student responses occur simultaneously, joint feedback allows the instructors to manage multiple competing voices in their classroom, which in turn potentially increases the sense of one-on-one attention for the students receiving the feedback. This is an

important finding as it corroborates prior research (e.g., Armstrong, 1977) that suggests co-teaching facilitates the provision of individualized instruction, but extends this point to demonstrate this can be beneficial during a student response "free-for-all" (Edelsky, 1981), when a number of simultaneous voices all vie for the floor at once. Finally, the practice of joint feedback also reflects one way in which co-teachers may supplement each other's efforts to provide more accurate information that is better aligned with student learning. Having two instructors available to listen to student responses increases the opportunity to spot problems in student understanding and offer more robust and pedagogically sound feedback.

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APPENDIX A (Jefferson, 2004)

.	(period) falling intonation.
?	(question mark) rising intonation.
,	(comma) continuing intonation.
-	(hyphen) abrupt cut-off.
::	(colon(s)) prolonging of sound.
word (underlining)	stress.
WORD	(all caps) loud speech.
°word°	(degree symbols) quiet speech.
↑word	(upward arrow) raised pitch.
↓word	(downward arrow) lowered pitch.
>word<	(more than and less than) quicker speech.
<word>	(less than and more than) slowed speech
<	(less than) jump start or rushed start.
hh	(series of h's) aspiration or laughter.
.hh	(h's preceded by dot) inhalation.
(hh)	(h's in parentheses) inside word boundaries.
[ ]	(lined-up brackets) beginning and ending of
[ ]	simultaneous or overlapping speech.
=	(equal sign) latch or contiguous utterances of the same speaker.
(2.4)	(number in parentheses) length of a silence in 10ths of a second.
(.)	(period in parentheses) micro-pause, 0.2 second or less.
( )	(empty parentheses) non-transcribable segment of talk.
((*gazing toward the ceiling*))	(double parentheses) non-speech activity or transcriptionist comment.
{((*words*))-words}	dash to indicate co-occurrence of nonverbal behavior and verbal elements; curly brackets to mark the beginning and ending of such co-occurrence if necessary.
(try 1)/(try 2)	(two parentheses separated by a slash) alternative hearings.
$word$	(dollar or pound signs) smiley voice.
#word#	(number signs) vocal fry, or creaky voice.
%word%	(percentage signs) breathy voice