



Eliciting student participation in synchronous online L2 lessons: The use of oral and written DIUs

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ARTICLE INFO

Article history:

Received 27 June 2021

Revised 3 July 2022

Accepted 7 July 2022

Keywords:

DIUs

Online language classrooms

Korean EFL classrooms

Multi-modal conversation analysis

ABSTRACT

This study examines the teacher's use of verbal and written designedly incomplete utterances (DIUs) within the initiation-response-feedback (IRF) sequence by analyzing data collected from synchronous online language learning classrooms conducted via Zoom. Multimodal conversation analysis was employed to demonstrate that both the teacher and the students paid close attention to the construction and completion of DIUs through both written and spoken modes. This practice was primarily deployed by the teacher to elicit talk from students by offering the initial part of the response turn. The 121 sequences containing DIUs solicited participation from students through collaborative writing of their answers on the shared screen. This study may contribute to recent CA research on the embodied work of teaching (Hall & Looney, 2019) and situated learning activities (Goodwin, 2013; Kyratzis & Johnson, 2017) by describing a pedagogic practice that may have been adopted to help students participate in online discourses. The results may also offer a much-needed description of the actual occurrences of DIUs in online L2 classrooms.

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1. Introduction

This study explores the instructor's use of designedly incomplete utterances (DIUs, Koshik, 2002) in synchronous online language learning classrooms. The COVID-19 pandemic has rendered online classrooms common for the daily life of learners. When this study was conducted during the spring of 2020, all public elementary school students in the greater Seoul area were holding online classes. The management of instruction using an online platform such as Zoom can challenge teachers as the facets of embodied resources are lacking in online compared to offline classrooms (Tudini & Liddicoat, 2017). In traditional face-to-face classrooms, embodied resources such as gaze, pointing, and body orientation can index interpersonal understanding *in situ* (Hall & Looney, 2019) while online classrooms may show different use of these resources. Interactional procedures that teachers and students mobilize to manage online classroom interactions have so far been sparingly examined (Wut & Xu, 2021). In order to address this gap in research, this paper analyzes verbal and written DIUs, a specific form

of semiosis used in the online language classroom to build coordinated action in attending participants (Goodwin, 2000). While there exists decades of significant research on DIUs, none have examined its usage in online language learning classrooms nor its employment in the written form. By attending to both verbal and written resources, the current study may contribute to our understanding of how teachers and students build collaborative actions in the online learning context using this practice. The use of online resources such as the shared screen and collaborative writing practices can also bring insights to research on the embodied work of teaching as depicted in the act of on-screen writing (Hall & Looney, 2019; Looney, 2019) and situated learning activities (Goodwin, 2013; Kyratzis & Johnson, 2017).

Extract 1 illustrates the target phenomenon: the teacher inquires about the student's morning ("What did you do in the morning."). After a pause of 0.8 s, the teacher produces a DIU "in the morning," while simultaneously typing the words on the screen (line 3).

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Extract 1. 1st class: 25:40¹ (Figures of zoom sessions associated with the talk are provided in Extract 3)

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01  T:    S5 okay. Let's go. What did you do in the morning.
02      (0.8)
03  T: -> +In the mo::rning,
      T    +types "in the morning"-->
04  S5:  In the morning,+
      T      -->+
05  T:    Ye[ah.
06  S5:    [I ate pan cake.
07  T:    Pan cake? +Wo[w.
           +begins typing "I ate pancake"-->7.9
08  S5:    [I ate.
09  T:    (1.2)+ Great.
           -->+

```

Lines 1 to 9 constitute an Initiation-Response-Feedback (IRF) sequence, one of the most ubiquitous forms of classroom interaction (Mehan, 1979; Sinclair & Coulthard, 1975). The target turn (lines 3) occurs in between the teacher question (I) and the student answer (R), where the teacher verbally enacts the first part of the student's turn while inscribing the words on the shared screen ("in the morning"). The term DIU describes the target phenomena of syntactically incomplete turns that make turn transition relevant in instructional contexts, both in spoken and written modalities. The goal of this study is to explore the sequential organization of such DIUs and investigate how available online resources and actors in different positions (i.e., students and teachers) can contribute to the organization of cooperative and embodied actions during language lessons conducted online (Goodwin & Goodwin, 1986; Goodwin, 2013; Hall & Looney, 2019). Analysis of the data set revealed the following organizational structure of DIUs employed by teachers within the IRF sequence. DIUs occurred when 1) the teacher's question was followed by the student's display of trouble (e.g., pause, confused expression), or 2) the student produced an answer that was problematic either by being too short or not following the target linguistic structure as proposed by the teacher in earlier tasks.

It appears that the teacher deployed DIUs to provide students with the structural tools necessary to successfully share their knowledge at the same time conveying that the projected completion of the turn lay within the student's epistemic domain by not completing the sentence. Prior studies conducted on DIUs in the classroom setting (Koshik, 2002; Sert & Walsh, 2013) have generally accorded epistemic authority to the teacher rather than the students. However, the types of questions asked in the current dataset grant the right to knowledge to the students (Heritage & Raymond, 2012) by being formed as referential questions (Seedhouse, 2004), which have not been examined as much in previous studies on instructional discourse. Although the teacher engages in the actual typing of answers, the text production activity is construed as a joint project built by both the teacher and students. In answering referential questions initiated by the teacher, students denote the party responsible for constructing specific forms of actions while the teacher partially assumes the role of the author, the person employing DIUs to devise the linguistic sign complex required to state the proposition that the student will produce (Goodwin, 1984). This participation framework may influence how sequences containing DIUs are built. The research question for this article can be summarized as follows:

What actions do the teacher's oral and written incomplete sentences perform in online L2 classrooms?

2. Past research on designedly incomplete utterances (DIUs)

A substantial body of research exists on sequences containing DIUs and syntactically incomplete utterances, both in everyday and institutional interactions (Chevalier, 2009; Hayashi, 2003; Koshik, 2002; Lerner, 1991, 2004; Park, 2015; Park & Kline, 2020; Persson, 2017). In ordinary conversational settings, DIUs may be employed to achieve diverse actions including seeking information from a more knowledgeable addressee (Persson, 2010), creating affiliation and solidarity (Lerner, 1991; Chevalier, 2009), initiating topics (Park, 2015), or withholding criticism of others (Park & Kline, 2020). Participants can affiliate with the current speaker in ordinary conversations by completing a preliminary and nonfinal turn component, such as clauses initiated by *if* or *when*, lists in progression, and components with contrastive stress (Lerner, 1991). In such instances, they can demonstrate agreement or collaborate in explaining something to a third-party. Participants may apprehend spaces that are presented when the sequence of turns is stopped by sound stretches, cutoffs, laughter, or intra-turn pauses that may occur, for instance, in the quest for an appropriate word. They may then infer the incomplete utterance as the exploration for completion and build collaborative turn sequences (Lerner, 1996) by offering a grammatically continuous utterance in the following turn (A: "Were willing to help and?"-B: "saved"). After such co-completion, the original speaker may reassert authority over the utterance that was initiated by accepting or rejecting the offered completion. Related research on unfinished turns has described these practices as initiating a topic or as resources to seek solidarity and minimize possible threats to the participant's face (Chevalier, 2009; Park, 2015). Unfinished turns ending with a contrastive conjunction such as "but" may be used to withhold the overt criticism of others during a joint evaluative activity (Park & Kline, 2020). Here, unfinished turns are followed by responses appropriate for the next turns to the actions embodied by the unfinished turns. For example, an agreement may be produced after an incomplete summary assessment (A: "It'll be better that way it's not going to [be]"-B: "[Yeah]"). Despite the wealth of research on DIUs, these research has tended to only marginally touch on the way DIUs may be intertwined with embodied action and the material resources (e.g., the occurrence of writing or typing) of the setting.

In instructional discourse, DIUs are recurrent features of teacher-student interaction (Margutti, 2010) and may constitute first pair parts by making the completion conditionally relevant as a second pair-part (Koshik, 2002). Koshik's pioneering study on writing conferences of English as a second language (ESL) students with teachers described a three-part sequence occurring in teaching activities. This structure begins with a designedly incomplete utterance (DIU) to elicit self-correction of written language errors by students.

Extract 2. Koshik, 2002, p. 287

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181 TJ:    .h: ((reading)) >he died not from injuries.<
182      (0.5) ((TJ and SH gaze silently at text))
183      but drowned
184      (1.2) ((TJ and SH gaze silently at text))
185  ->    <after he>
186      (4.5) ((TJ and SH gaze silently at text))
187 SH:  -> had been?
188 TJ:    there ya go.
189      (4.0) ((TJ writes on text))

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¹ Transcription notations are provided in the Appendix.

The teacher produces a DIU, “after he,” in line 185, which is followed by completion from a student (line 187, “had been”). The completion is then subject to the teacher’s acceptance or rejection in the third turn. Koshik noted that the DIUs in her data acted as known-information questions frequently found in teaching activities. Teachers elicit answers through DIUs in the form of knowledge displays from respondents while exercising epistemic authority over the answer in the third position (e.g., line 188, “there ya go.”). Here the DIUs function like a test (Searle, 1969) or display (Long & Sato, 1983) question as they are used to evoke a presentation of knowledge display from the students that the teacher already commands. The DIUs can cue actual trouble sources by stopping just before a candidate trouble source. They target the trouble source for correction and are usually accompanied by a prosodic marking such as a sound stretch in the last syllable, significant slowing at the end of the utterance, or continuing intonation. The extant research on DIUs has revealed that teachers can use DIUs as an interactional tool to engage students’ resources after students claim of insufficient knowledge (Sert & Walsh, 2013). DIUs can also be utilized to perform actions such as hinting, prompting and modeling (Margutti, 2010). Studies have also investigated teachers’ use of “sentence stems” to describe how syntactical language supports including sentence starters and sentence frames (Rodriguez-Mojica & Briceno, 2018) alleviate the cognitive load of oral and written expression, allowing the students to focus on the content rather than how to phrase their ideas. The DIUs examined in the current study share the characteristics of “sentence starters” which begin a sentence (“In the morning. ____”), rather than “sentence frames” which provide support for more complex syntactical structures (e.g., “I infer ____ because the text states ____”). Numerous studies have been published on the use of DIUs in distinct first or second language (L1/L2) classroom settings wherein teachers ask known-information questions to their students (Li, 2016; Persson, 2017; Margutti, 2010; Netz, 2016).

As such, ample studies exist of form-and-accuracy L2 classroom contexts where known-information questions are dominant (Seedhouse, 2004). However, there is limited scholarship on DIUs that are genuinely deployed for information seeking, which tend to occur in meaning and fluency language learning contexts (Seedhouse, 2004). Here, the pedagogical focus is not on the provision of accurate answers to form-focused questions. Therefore, teachers may use questions that ask for information that the teacher does not know (Long and Sato, 1983). Through such inquiries, teachers position themselves in a relatively unknowing position to the student who responds, initiating sequences that invite information from the student. The current study focuses on the teacher’s use of DIUs that follow referential questions in meaning and fluency contexts (Seedhouse, 2004) whereby a series of *wh*-questions are asked to students. Drawing on previous studies, the aim of the current study is to investigate the functions of writing and speaking DIUs during the activity of shared text production within IRF sequences.

This study contends that DIUs in both written and spoken modalities may serve as a useful model to cooperatively build embodied actions in online L2 classrooms by inviting students to finish the DIUs initiated by the teacher. These DIUs act as a substrate (Goodwin, 2013), which is a public semiotic structure that provides students with resources that can be re-used to build a new action of their own. By re-using the DIU as a public substrate, students become active co-participants (Goodwin & Goodwin, 2004) in building the IRF sequence during online discourse.

3. IRF sequences in language classrooms and multimodal conversation analysis

Online L2 classrooms are largely organized through IRF sequences. According to the extant literature, the IRF sequence comprises almost 70% or more of classroom interactions (Cazden, 2001; Wells and Arauz, 2006). The current study determined that a higher number of IRF sequences dominated the online classroom, constituting more than 90% of the occurred exchanges. The teacher designed lessons as a series of related questions, and students participated in classroom interaction primarily by responding to the questions asked by their instructor. In language classrooms, IRF sequences may create opportunities for students to project their understanding and offer teachers the chance to immediately and responsively adjust instruction according to the needs of the learners. When designed appropriately, IRF-based lessons can accord students an equal ability to speak up during classes, which may explain the reliance of this sequence in the online setting. Prior research has examined how teachers adjust their questions when students display difficulties in answering their questions (Lee, 2007; Macbeth, 2004; Zemel & Koschmann, 2011).

An abundance of research has examined the benefits and drawbacks of the IRF sequence by focusing on the types of questions and evaluation methods used by teachers. Scholars have recently also started attending to the multimodal aspects of the IRF sequence. For example, the role of gestures in IRF sequences has been explored in STEM classrooms to evince how teachers employ bodily signals to complement their questions and elicit student responses (Flood, 2021). Fewer studies have investigated IRF sequences in online settings although the technique may have been performed differently, thereby necessitating additional interactional work for such contexts (cf., Jenks, 2014). Participants only share a part of their environment, which is additionally mediated through technology when parties are brought together in a quasi-co-presence through online visual channels, such as Zoom, Webex, or Skype. The analyst can only work with a constrained set of resources as the computer screen fixes the user in a “disembodied spectatorial relation to a removed scene” on the other side (Malinowski & Kramsh, 2014, p. 159). For example, eye gaze information is not available for participants in the same way as it would be the case for co-present interlocutors. It would be extremely beneficial to evaluate the complex interactions of on-screen and off-screen activities during interactional processes involved in online communication, especially when future education will require a part of the curriculum to be advanced online. This line of research is also relevant for the understanding of interactional complexities and concurrent interplays between on-screen, off-screen, voice, and text affordances for language learning. For example, Jenks (2014) investigated multiparty voice conversations conducted via Skype among speakers of English as an additional language and identified the ways in which participants were required to engage in specific communicative efforts to enter an ongoing conversation.

Multimodal CA has been employed by scholars to investigate the embodied work of teaching and situated learning activities in a variety of settings (Hall & Looney, 2019; Tadic & Box, 2019). For example, Kunitz (2015) employed multimodal CA to investigate problems students encountered in L2 Italian by studying the script-as-emergent artifact as compared to the script-as-final-product. The study showed how students solved problems of grammar and vocabulary by resorting to an online dictionary or relaying on their knowledge of their L1 and L2 during planning talk. Multimodal CA may demonstrate how verbal and writ-

DIUs after student's display of trouble	DIUs after a student answer
Line 1 Teacher question (I)	Line 1 Teacher question (I)
Line 2 Student's trouble display	Line 2 Student answer (R)
Line 3-> Teacher's DIU	Line 3-> Teacher's DIU
Line 4 Student answer (R)	Line 4 Extended student answer (R)

Fig. 1. The organizational structure of the two uses of incomplete sentences.

ten DIUs are used by the teacher to solicit students' responses through the meaningful intersection (Murphy, 2005) or lamination (Goodwin, 2013) of various semiotic resources. Such an approach enables a moment-by-moment analysis of what actually happens in the process thereby allowing us to observe the practices and the local resources through which incomplete sentences are progressively completed and co-constructed in the interaction. The current study may contribute to this line of research by bringing into focus the situated writing practice in online synchronous language classrooms.

The sections that follow first describe the dataset and the analytical framework within which data were examined. After a detailed microanalysis of the video data on the use of DIUs, the paper concludes with a discussion of both theoretical and empirical implications of the findings and notes its limitations.

4. Data and methodology

The video corpus analyzed for this study was collected in the spring of 2020 and comprised approximately 4 h of video recordings from four online L2 English classroom lessons conducted via Zoom. The lessons involved video interactions which largely relied on the shared screen that displayed lesson objectives, teacher questions and student answers. In this setting, converting student answers into written form was central for sustaining the classroom interaction, which is also a common feature of 'doing' meetings or discussions (Meehan, 1986; Mortensen, 2013). Students wrote down their response that were displayed on the screen which was later confirmed by the instructor. Online learning had then become the new normal aspect of the students' lives under the Korean government's COVID-19 pandemic norms that mandated Level 2 social distancing protocols to be applied and prohibited gatherings of more than five students. A total number of six Korean students between 13 and 14 years and one English teacher participated in the online lessons that yielded the data for this study (the number of students varied between four to six for each lesson). The teacher was a Korean national who had accrued thirteen years of English teaching experience in South Korea and had completed the Teaching English to Speakers of Other Languages (TESOL) certification at the graduate school level. All participants granted consent for being videotaped and for using the data in publications. All identifying information (person names) were replaced with pseudonyms in the transcripts reproduced for this paper; specifically, in the transcripts we refer to the students using numbers ('S1', 'S2'). Photos of participants were blurred in order to protect the identity of students. The students undertook these classes as part of an extracurricular English course offered by a private institution located in Seoul, Korea. All the participating students had studied English as

a foreign language (EFL) in South Korea for at least four years as part of their public school education. None of the participants had any experience with study or living abroad in a country in which English was spoken as the first or official language. According to their English teacher, the English language abilities of participants were representative of the average Korean student of commensurate age who had received English instruction only in the Korean educational context.

The online classes were aimed at enhancing the L2 speaking and writing skills of students. The target lessons progressed through a series of questions inquiring about the personal experiences or opinions of students rather than seeking to confirm knowledge (i.e., test questions). The classroom held a strict English-speaking-only policy and no Korean language iterations were allowed. Therefore, the teacher used a variety of participatory pedagogic practices, including DIUs, that asked for students to tender their experiences and opinions about their everyday lives. In addition to eliciting responses and thus providing opportunities to learners to practice speaking in English, the teacher was also responsible for teaching language elements, such as sentence structure, vocabulary, and pronunciation. The students were expected to learn English by participating in instructional sequences. A typical classroom lesson proceeded through four to five main questions that were prepared by the teacher based on the class topic of the day (e.g., My happy yesterday, My parents' yesterday). Fig. 2 illustrates the flow of every English lesson. After the class ended, the students were required to submit a written form of their answers as their assignment.

The analytic approach adopted for this study was multimodal conversation analysis (C. Goodwin, 2000, 2010, 2013; C. Goodwin & M.H. Goodwin, 1986, 2004; M. H. Goodwin & C. Goodwin, 2012; Hall & Looney, 2019). CA attempts to determine the methods, resources, and real-time practices through which participants "produce their own behavior and understand and deal with the behavior of others" (Heritage & Atkinson, 1984, p. 1). Thus, this methodology offered useful tools through which the actions served by the teacher's DIUs during online classroom interactions could be understood. Instead of relying on their own construal of occurrences of the prior turns, conversation analysts scrutinize members' own "display of those understandings" (Sacks et al., 1974, p. 729). The methodology was also aligned with the notion that learning occurs as individuals participate and are guided by others in situated, culturally meaningful, and multiparty activities (Erickson, 2002; Lave & Wenger, 1991). A multimodal CA framework was employed for the microanalysis of embodied social interactions to examine the moment-by-moment processes through which interactions unfolded. This framework views cognitive activities as "multiparty interactive fields" (C. Goodwin, 2006, p. 12), within which "multiple participants are building in concert with each other the actions

that define and shape their lifeworld" (C. Goodwin, 2000, p. 75). Goodwin (2013) evidenced how learning and cognitive action are co-constructed not through talk by itself but through the mutual elaboration of diverse semiotic resources, including, talk, spatial formations, embodied action, and objects. Transcription conventions developed by Mondada (2019) were adopted for transcribing embodied action including the precise moments when the teacher began and finished writing on the shared screen. The transcriptions include screenshots of analytically relevant moments during the interaction.

The investigation of IRF sequences appraised the teacher's use of oral and written DIUs. The analysis was based on a core collection of 121 instances of incomplete sentences produced by the teacher in either oral or written modes. Most of the DIUs were delivered simultaneously in both spoken and written form (118) with a slight difference in time; three instances were found in which the written incomplete form was used on its own without any verbal prompt. Among the 121 instances, seven representative examples were selected for the analysis of the two principal actions that were performed: help building student responses (75 instances) and extending student responses (46 instances). In 75 instances, DIUs occurred following a teacher's initiation turn when a pause or behavior indicative of trouble (a frowning face, shift in position) occurred. A smaller number of DIUs (46 cases) were found after a student gave a response that was not long enough or did not follow the sentence structure provided during previous instructional sequences (Fig. 1).

5. Results and analysis

As noted above, the analysis conducted for this study involved two types of actions served by the teacher's use of DIUs: 1) building student responses by using both the oral and written modalities to provide the first words that would begin the student's turn, and 2) soliciting additional talk from the student after an answer was produced. Owing to the nature of online interactions, the teacher and students relied on the written mode (i.e., the shared screen) while constructing their actions through speech. The teacher's use of both verbal and written DIUs in building and soliciting student responses also showed how computer-supported work in the classroom invited multimodal activity wherein parties simultaneously attended to the available resources (e.g., voice, shared screen, facial expressions) online.

5.1. Oral and written DIUs as resources for the construction of student responses

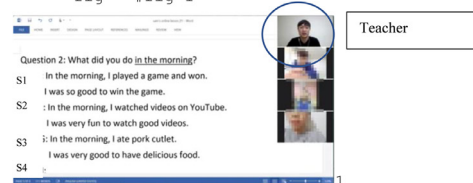
The lessons progressed via successive IRF sequences, with frequent pauses between the question and answer turn. The primary objective of these L2 lessons was to provide opportunities for students to practice English. Thus, most of the teacher-initiated questions were referential inquiries about the personal experience and ideas of the learners. Nonetheless, most students found it difficult to produce and construct answers in their L2 and rarely talked out of their turn, as is characteristic of many Korean EFL classrooms (Park, 2015). Probably because it becomes more difficult on online platforms to understand who the speaker is when multiple speakers converse simultaneously, students mostly spoke when they were specifically addressed and when it was their turn to answer the teacher's question. In this context, the teacher relied pre-

dominantly on oral and written DIUs to help students build a response. As demonstrated below, the students built their answers by recycling the teacher's DIU (e.g., In the morning,) and subsequently completing the rest of the turn (e.g., In the morning, I ate pan cake) rather than merely concluding the initiated incomplete sentence (e.g., I ate pan cake).

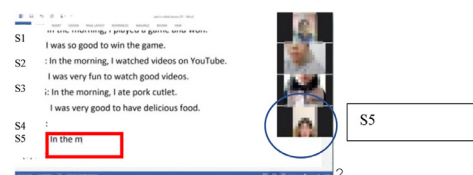
In Extract 3, students are taking turns answering the question "what did you do in the morning?" This query was displayed on the top of the shared screen on which the students could view the question as well as their names inscribed in succession below the interrogative statement. The teacher wrote the responses of students next to their names on the screen as they answered. In this particular scene, the teacher called on "S5" and asked her, "What did you do in the morning" (line 01) after three students had already provided their own answers (which are displayed on the screen). Following a 0.8 second pause during which no answer was offered, the teacher uttered a DIU, almost simultaneously typing the phrase "in the morning" onto the screen. The #fig mark the exact position at which the screenshots were taken.

Extract 3. 1st class: 25:40

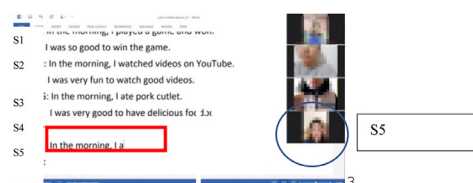
01 T: #S5 okay. Let's go. What did you do in the morning.
fig #fig 1



02 (0.8) ((S5 smiles))
03 T: +In the mo::rning,
+types "the morning"-->
04 S5: #In the morning,+
T -->+
fig #fig 2



05 T: Ye[ah.
06 -> S5: [I ate pan cake.
07 T: Pan cake? Wo[w.+
+begins typing "I ate pancake"-->
08 S5: [#I ate.
fig #fig 3



09 T: (1.2) + i:reat.
-->+

DIUs were frequently employed when there was a pause and/or non-verbal indication of trouble (i.e., a quizzical look, abrupt shift

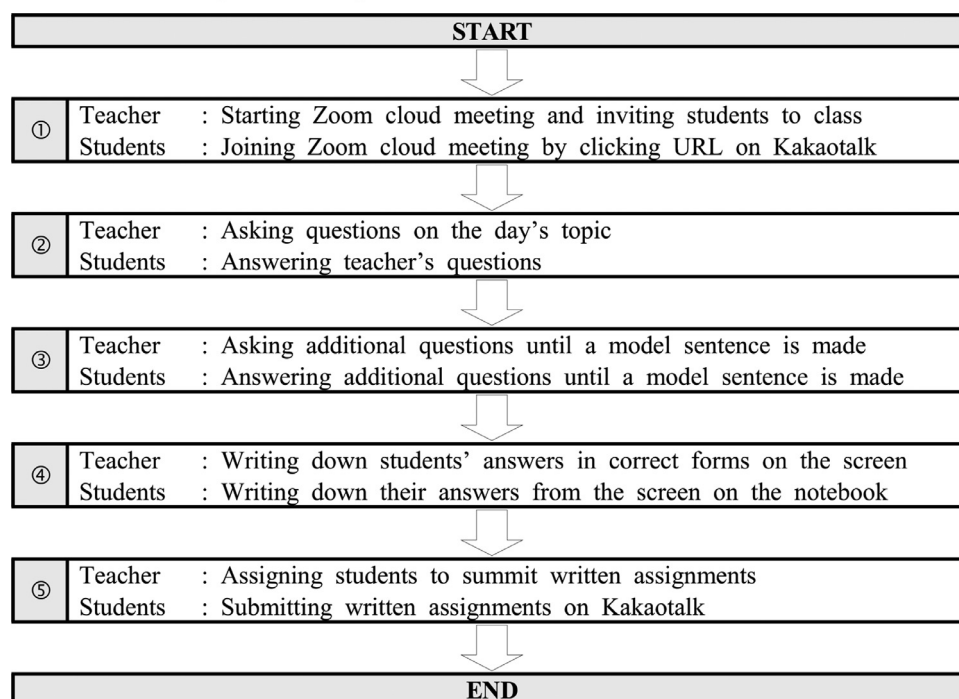


Fig. 2. Lesson procedure.

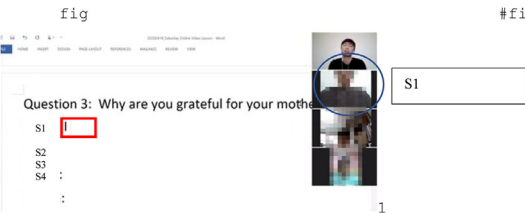
in body posture) following the teacher's question. In this example, the teacher constructed a DIU after a 0.8 pause, when the student did not immediately answer his question (line 1 "What did you do in the morning") and produced a smile instead. A smile employed by a student in the second turn of the IRF may display uncertainty and trouble (Looney & Kim, 2018). Here, the DIU (lines 2-3) made the student's completion relevant by syntactically projecting more talk in the following turn through a rising intonation contour associated with completion seeking (Persson, 2017). At the same time, the vowel lengthening ("mo::rning,") held the turn as the instructor wrote down the sentence in an action of "writing aloud" (Mortensen, 2013). An answer, in the form of repetition and utterance completion was rendered by the student at lines 4 ("In the morning,") and 6 ("I ate pan cake"), thereby bringing the syntactic structure to a possible completion. Notably, the student's repetition of the teacher's DIUs ("in the morning") were carefully coordinated with what the teacher was typing on the screen. The student calibrated her speech by repeating the teacher's DIU in pace with his writing of "in the morning" on the screen (line 04). When the teacher produced a confirmation (line 05, "yeah"), which displayed his availability to the student (he had finished typing) to now generate the missing piece of information, the student uttered the words "I ate pancake" in overlap (line 06). In line 8, she also repeated "I ate" at the exact moment when the teacher wrote those words on the screen as if clarifying and legitimizing the teacher's actions (fig 3). The student's turns were fitted in fine detail to the local environment from which they emerged by attending to the teacher's action. Each turn performed timely actions that attended to multimodal resources layered in the environment in co-constructing an answer. The student's repeats were used as a resource to display her attention to the teacher's actions of writ-

ing on the screen. The teacher and student enacted and responded to the DIU as a public substrate (Goodwin, 2018) by closely concentrating on both the oral and written modes available to them. When written products are the goal of the interaction, research showed that participant coordinate their actions through the interplay between verbal, embodied, material resources of the setting (Mortensen, 2013; Nizzi, 2015) for the collaborative construction of texts. The current study also showed that participants carefully performed multimodal actions by coordinating speech and writing (e.g., on-screen writing and note-taking).

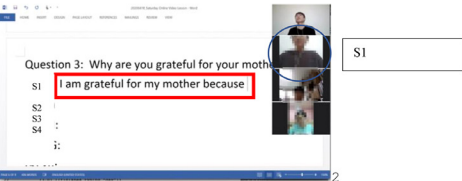
While Extract 3 was taken from a task repetition context (prior students have answered the same question pursued by the teacher), Extract 4 shows a case when the task (question) was asked for the first time (note the blank space in fig1, line 1). The target DIU occurs in line 08 after a pause of 0.2 seconds in which the teacher produces a pronominal "she:::". In the beginning of this extract, the teacher explained that S1 could build his answer by using the frame he inscribed on the screen (line 1, "S1 you can begin like this. I AM"). Instead of letting the student produce their own answers, the instructor utters multiple increments (Schegloff, 1996) in verbal and written form ("I am", "grateful" and "for my mother") that provides a syntactic language model (lines 01-04. By line 06, the teacher had printed "I am grateful because" on the screen and had repeated the target *wh*-question (lines 5-6, "why:: .hh uh do you feel grateful"). When the student did not respond immediately (line 7), the teacher employs a DIU, "she:::", (lin3 08), using vowel lengthening and a slightly rising intonation. This pronoun structurally builds onto the main clause that had just been produced ("I am grateful for my mother because").

Extract 4. 2nd class 28:47

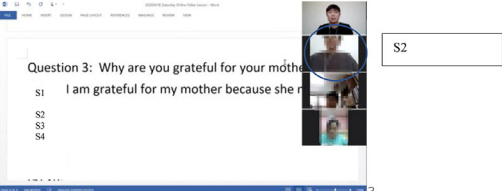
01 T: S1 you can begin like this. +I AM. (0.8)#
 +begins typing "I"-->
 fig #fig1



02 T: grateful. (0.2)+
 +types "am grateful"-->
 03 T: +for my mother. (1.0)+
 +types "for my mother"-->
 04 T: Be+cause. (0.2)=+#
 +types "because"-->
 #fig2



05 T: =What did she do for you yesterday or WHY why:: .hhh uh
 do you feel grateful.
 (0.2) ((S1 tilts head))
 08 -> T: She+::,+=
 +writes "she"+
 09 S1: =U::h ((S1 tilts head again))
 10 T: Yeah she:: made delicious food for me o::r she hugged me or
 She said or you can also say like this.
 She made ME (.) she made me:: SO:: happy::
 13 O::r
 14 S1: [She.=
 15 T: =Yeah.
 16 S1: Yeah she made me so happy.
 17 + (3.0)#
 + Teacher types "she made me so happy"-->
 fig #fig3



18 T: happy::+ yesterday?
 -->
 19 S1: yes.
 + (1.0)+
 +Teacher types "Yester"+
 21 T: U::h
 22 (3.0)
 +T finishes typing "day" and pauses+
 23 T: Oh yeah that's +good >I am grateful for my mother
 +scratches head with hand/head tilt...
 24 because she made me so happy yesterday. Wow.

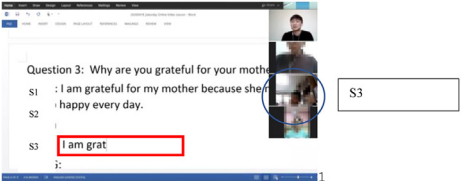
At line 9, S1 spoke for the first time by producing an "uh" following the teacher's "she::," and tilts his head. The teacher followed this hesitation (and possibly understood the student's head tilt as a sign of trouble) with a list of sample responses, and in line 14, the student began his turn with a "final falling intonation "she," in overlap with the teacher's "or," (lines 13–14). He picked the last of the listed items (in lines 10–12) and provided an answer ("yeah

she made me so happy"). The teacher's DIU (line 8) provided structural support for the student to provide their own answers after a trouble was noted (line 07) after the teacher's initiation question (line 5).

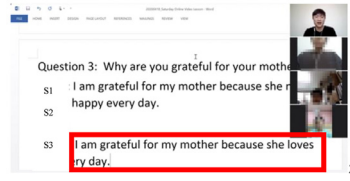
When the same question is repeated, the students may utilize prior students' answer as well as the teacher's DIU when building their answers. Extract 5 occurs a few minutes after Extract 4 after the students had taken turns answering the question, "Why are you grateful for your mother?" S3 was the third student to offer a response to this question. After the teacher's questions (line 1, "but why"), there was a short pause in which the S3 gazed upward instead of looking at the camera. The teacher used both verbal and written DIUs almost simultaneously following this pause, after which the student provides an answer utilizing this frame. Instead of producing the entire clause ("I am grateful"), the teacher utters "I am" while continuing to write "grateful" on the screen (lines 03–05).

Extract 5. 2020 Lesson 2. 30:24

01 T: But why.
 02 (0.2) ((S3 gazes upward))
 03 -> T: I +am::,
 +begins typing "I am" on the screen-->
 04 S3: mmm.
 05 (1.0)+
 T writes "I am grat"-->
 fig #fig1



06 S3: I +am grateful for my mother because she loves me everyday?
 T +continues to type "-ful for my mother because" -->
 07 T: Wow wow I love it. Really really +
 -->
 08 T: +She loves me everyday.+
 +types "she loves me everyday" -->
 fig #fig2



There was a 0.2 s pause after the question "why," post which the teacher produced the DIU "I am::" in both written and spoken form. During this pause, the student gazes upwards and displays a thinking face which is commonly associated with a searching for a word activity (Goodwin & Goodwin, 1986). The student hesitated ("mmm") and a 1-s pause ensued, during which the teacher continues to write "I am grat" and stops typing (line 05). The student's answer displayed in line 06 ended this silence: the learner repeated the teacher's DIU ("I am") and added the words "grateful for my mother because she loves me every day?" This answer was very similar in structure to the prior student's answer, which was inscribed on the screen (i.e., I am grateful for my mother because she makes me so happy every day"). S3's turn ended with a try-marked questioning intonation that exhibited his orientation to the accuracy or adequacy of his reply. The teacher accepted his answer by employing an excessive positive evaluation "Wow

wow I love it" (Waring, 2008) as he typed the student's answer on the screen and engaging in writing aloud of the student answer (Mortensen, 2013). Both his appraisal and his repeat established the legitimacy of the student's answer.

Thus far, the paper has examined instances in which the teacher's DIUs aided students in generating answers in the on-line classroom through the provision of beginning a syntactically complete response using both the spoken and written forms. DIUs that elicit student responses did not end at syntactically complete points; instead, they stopped in a position that could not grammatically end a sentence, clause or a phrase and were accompanied with a vowel lengthening and final rising intonation (e.g., "I am:," "she::,"). Thus, spoken DIUs were carefully administered through the use of such prosodic qualities in addition to the syntactic frame and were accompanied with writing. DIUs also accord students with the portion of the response that is usually eliminated in an answer in an ordinary conversation. In a casual dialog, individuals may respond to "Why are you grateful?" with a simple clause answer "Because she loves me" rather than using a coordinated clause "I am grateful for my mother because she loves me." L2 students are often required to produce complete sentences in the classroom setting. The efficacy of this necessity may be debated; however, based on the quantum of speech generated by students, the mandate to produce sentences seemed to afford them more opportunities to practice the English language as response turns were almost the only moments in which the students produced talk.

It was observed in this section that the teacher and student both carefully attended to oral and written DIUs to collaboratively enact their turns within the larger IRF sequence. In these meaning and fluency language learning contexts, DIUs acted as resources for seeking information and provided students with syntactic and linguistic support to produce a response. This action can be contrasted to polar yes/no questions or confirmation questions, which offer one candidate answer as a likely guess (Pomerantz, 1988). The teacher simultaneously employed multimodal actions by attending to both oral and written DIUs while attending to students' facial expressions and behaviors on screen. The next section considers a related action performed by DIUs found in the dataset in a different sequential location following student responses.

5.2. Oral and written DIUs that extend students' answers

In addition to building student answers by offering the structural beginning of the answer, DIUs also frequently demanded further talk and elicited extensions to the previous answers tendered by students. When DIUs regulated the form of the answer and elicited further talk, they were sequentially located after a student's answer was already produced or in the process of being produced. The DIUs offered as samples in the previous section were positioned after preceding responses by students, portraying them as insufficient and in need of elaboration. In this sense, they were similar to increments found in ordinary conversation which Schegloff (1996) described as grammatical extensions of the prior unit rather than an independent grammatical structure or turn constructional unit (TCU). These DIUs were employed when no apparent errors were noted in a student's answer, but the teacher was trying to make the learner produce a longer turn or to follow the structural modal proposed by prior answers. Such a sequence is shown below, when the student's response ("I was so good") to the teacher's question inquiring about her feeling after eating a pancake was followed by the teacher's DIU "to:: ha::ve" (line 17) both in the speech and writing. Following the DIU, the student repeated "have" and completed the missing syntactic information "delicious food" (line 20).

Extract 6. 1st lesson: 25:55

08 T: Great. So, so, how, how how were you?

09 >Like how did you fee::l at that ti::me, while you were eatin

10 the .shhh delicious [pancake

11 [((kid shouting in the background))

12 [Oh oh somebody's shouting.

13 SS: [((smiling))

14 S5: I was so: good.

15 T: +I was so good to::

+types "I was so good to"-->

16 (0.2)

17 to::+ ha::+ve=

-->+ +types "have"-->

18 S5: =have.+ #Ummm:: ((thinking face))

T -->+ +types "have"-->

fig #fig1

S1 was so good to win the game.

S2 In the morning, I watched videos on YouTube.

S3 I was very fun to watch good videos.

S4 In the morning, I ate pork cutlet.

S5 I was very good to have delicious food.

S5 In the morning, I ate pan cake.

I was so good to have

20 S5: deli[cious food

21 T: [deli- delicious food?

22 T: Great. Per+fect.

+types "delicious food"-->

23 T: Yea::h+ you felt really good right? >and the::n #S6?

-->+ +types "delicious food"-->

fig #fig2

S2 in the morning, I watched videos on YouTube.

S3 I was very fun to watch good videos.

S4 In the morning, I ate pork cutlet.

S5 I was very good to have delicious food.

S5 In the morning, I ate pan cake.

I was so good to have delicious food.

S6

By adding the increment "to::" and "ha::ve" (line 17) while simultaneously engaged in the activity of writing, the teacher invited the student to complete the sentence by extending a phrase that described the reason for feeling good after eating a pancake. S5 understood that "to:: ha::ve" was an invitation to deliver additional information and sought a noun phrase (line 18, "have. Ummm"), evincing a thinking face. The teacher validated the answer by repeating it and writing it on the screen (lines 21-22). Thus, the DIU acted as a resource to elicit additional talk from the student and functioned as a means of asking for more detail on the concerned issue. They were thus comparable to 'hanging repeats' (Rossi, 2015) that requested completion of the conversation initiated by a prior speaker but with additional elements that could aid the construction of an expanded turn.

The following example shows how the teacher may initiate the amendment on the answer made by the student through DIUs. In Extract 7, the teacher cut and pasted the expected beginning of the answer "and in the afternoon" next to S4's name on-screen while asking the question, "what about your afternoon?" (line 4). The on-screen writing functioned as a written prompt that made completion by the student relevant in the next turn. The teacher relied on the written prompt and prior students' answers on the shared screen as a resource for the student to fall back on rather than verbalizing a DIU (line 06). S3 began to utter "A:nd" in overlap even before the teacher finished asking the question (line 5). It is likely that the teacher interpreted the student's "and" as beginning "and in the afternoon" because he immediately produced a continuer, "Yes" (line 6). However, after a 1.8-second pause, S3 began to utter "I ride a bike" without repeating the prepositional phrase "in the afternoon." The teacher in overlap, produced an incomplete oral sentence that acted as an other-initiation of repair

(Schegloff, Jefferson, & Sacks, 1977) and produced an action similar to the DIUs described in Koshik (2002) that elicited self-correction of errors (line 10, “In the, in the?”). Following the repair initiation, S3 revised his answer by repeating “in the afternoon?” (line 11). After the teacher’s confirmation (line 13, “Oh yeah”), S3 went on to complete the DIU with “I ride a bi::ke,” (line 15).

Extract 7. 1st lesson: 30:55

01 T: Then, let’s go to (.) S3. Let’s go.
 02 (0.2)
 03 T Hello? +S3?+
 +claps his hands once+
 04 T: What [about your aftern-
 05 S3: [A::nd=
 06 T: =+Yes+
 + pastes the phrase “and in the afternoon” on the screen+

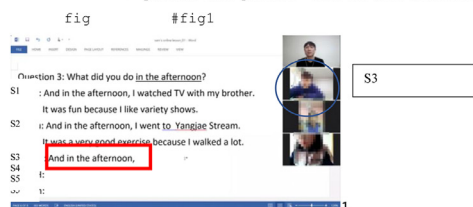
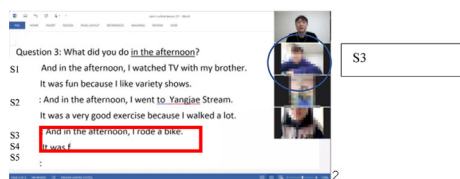


fig #fig1
 08 (1.8) ((S3 leans toward the screen))
 09 S3: I ride a [bike.
 10 -> T: [In the, in the?
 11 -> In the [after:::
 12 S3: [In the after[noon?
 13 T: [Oh yeah. In the afternoon,
 14 (0.8)
 15 S3: I ride a bi::ke,
 16 T: Great job, but I ro:: I:: I:: +I::
 +types “I rode”-->
 17 T: [ro::de a bike.
 18 S3: [I rode a:: bike.+
 T types “a bike”-->+
 19 T: Great job. How was it.
 20 (0.2)
 21 T: It wa::s,
 22 S3: [+It was very fun.#
 T + types “It was fun”-->
 fig #2



23 T: Very fun. (.) Why? Why was it fun? +
 “T erases “f” and types “very fun”-->+
 24 (0.2)
 25 S3: Because.
 26 + (0.8)
 T +types “Because”
 27 S4: It is very cool.
 28 T: +Ah, it wa::s very cool outside, right?
 + writes “it was very cool”-->
 29 T: Wow,+ amazing. You did a great job a::nd and S1.
 -->+

In this extract, the teacher asked S3 to answer the question “what about your afternoon?” (line 4) after two students had already provided their answers. Although the previous answers included “In the afternoon,” as was evident from the writing on the screen (e.g., S1: And, in the afternoon, I watched TV with my brother), S3 responded “I ride a bike.” Aside from the tense, this answer was not wrong, but the teacher employed a DIU to initiate a modification of this utterance. This intention to repair

redirected the student to use the written DIU displayed on the screen (Fig. 1) to construct his answer in a full sentence. Only after S3 produced “In the afternoon, I ride a bike,” the teacher began to write this response on the screen (lines 16–18), modifying the tense and replacing “ride” with “rode.” After producing an evaluation (line 19, “Great job”), the teacher asks a follow-up question asking how the bike ride was (line 19, “How was it?”). When an answer does not follow immediately (indicated by a 0.2 pause in line 20), the teacher employs another DIU (line 21, “It wa::s”) and provides the beginning of the answer for the student. The student answers “it was very fun” (line 22) in overlap with the DIU. It appeared that the teacher was collaboratively building the student answer to match the syntactic structure of the prior student answers written on the screen by using a series of DIUs after his own *wh*-question and student’s responses.

This extract highlights how the teacher used DIUs to regulate the talk produced from the student. The teacher repeated the beginning of the DIU (e.g., “in the”) when it was not duplicated by the student, even though it was not grammatically mandatory. The teacher’s confirmation (“yeah”) in between the student’s repetition of the DIU (“in the afternoon”) and utterance completion (“I ride a bike”) also evinced the relevance of repetition in this context. As noted in the previous section, language classes encompass the significant intent to offer students substantial opportunities to practice speaking and writing in English. Thus, even when teachers ask referential questions to the students, they may use DIUs as a resource to regulate the form or structure of the answers. The regulative actions of DIUs is similar to the function of “sentence starters” reported in prior studies (Rodriguez-Mojica & Briceno, 2018).

Research on DIUs employed in ordinary conversational settings found that such unfinished iterations were frequently followed by utterance completions that built a syntactically complete turn without repeating the DIU (Koshik, 2002; Lerner, 1996). However, in the current language classroom context, students were expected to repeat the teacher’s DIU before constructing a complete turn. The motivation for this practice is not clear but it may help generate additional opportunities for students to produce speech and also for the teacher to build a coherent lesson surrounding similar sentence structures (e.g., It was A, because it was B). The functions of DIUs appear to be adapted to the institutional objectives of the current online setting as well as the goals of the participants (to improve their English proficiency).

In sum, DIUs instigate the mending of the response turns of learners when the responses do not follow the structure provided in the previous sentences, or when the teacher is seeking additional information from the students. Students have more knowledge regarding their own experiences but the teacher commands more linguistic expertise: DIUs may be used to balance this difference. Both oral and written DIUs are used to elicit the repetition of that utterance and lead to a syntactically complete turn that reflects students’ experiences and opinions.

Many of the student answers were followed by additional DIUs that functioned as increments, soliciting further speech production from the student (e.g., Extract 7). Positive feedback and evaluation by the instructor ensued after the revised response. Interactivity and multimodal presentations do not trigger learning; however, students and teachers discover methods of participating in ways that may promote learning through student participation and co-construction specifically by employing DIUs as public substrates to build a learning activity (Goodwin & Goodwin, 2004).

6. Discussion and conclusion

The current study has documented systemic actions performed by oral and written DIUs generated by the instructor in syn-

chronous online L2 classroom. The analysis demonstrated that the teacher's DIUs were designed to accomplish two related pedagogical goals when they occurred in language learning contexts spanning meaning and fluency. First, they cooperatively built student responses by delivering the introductory words of the student turns in both spoken and written forms. This practice enabled students to complete their utterances once the beginning was initiated by the teacher. Here, the DIUs ended just before the part of the sentence that only the student can complete by evoking a presentation of knowledge or information from the students. Second, DIUs were used to extend a student's response when student responses did not fit the structural model presented by the teacher or when responses were too short. These DIUs were formed by developing a portion of the iterated answer or appending a word or phrase to the student's prior production. In either cases, DIUs in these meaning and fluency language learning contexts were employed as an interactional tool to bring out and accommodate students' resources after students' display of insufficient knowledge regarding the linguistic structure or vocabulary in their L2 occurred.

Examining the uses of DIUs contribute to our understanding of the dynamics of synchronous online L2 lessons whereby DIUs appear to occur very frequently. The teacher's use of verbal and written DIUs to solicit students' responses and the students' co-construction of responses online may also contribute to prior CA work on collaborative text construction (Kunitz, 2015; Nissi, 2015). The classroom proceeded with the teacher asking the same question to multiple students. Therefore, DIUs were often used when the question or task was repeated and was employed as part of the onscreen text construction sequence. Results may also have implications for the effect of task repetition on the teacher's formulation of instruction and soliciting students' responses (Kunitz, 2021) and the employment of "sentence starters" as a common scaffolding strategy (Rodríguez-Mojica & Briceno, 2018). DIUs in meaning and fluency language learning contexts seem to play a crucial role in balancing a dual orientation to form and content and not so much on correction of errors as reported in prior research.

The shift from traditional to online education through the support of digital technology is largely recognized as a trend or a predictive mainstream in the near future (Sobaih et al., 2020; Palvia et al., 2018). Therefore, a better grasp of online education will be required in the long-term, and this study may contribute to a more intensive comprehension of online learning practices. Rather than using eye-gaze as a significant resource for participant selection, the instructor used turn-taking practices (e.g., using a series of IRF sequence), nominating students by name, and the shared screen (e.g., mouse cursor) to address students. In the online setting, it appeared that the parties carefully constructed utterances aligned with the written form displayed via screen sharing. DIUs were frequently delivered through both written and spoken modalities, and in some instances, were only offered in writing (e.g., Extract 7) to elicit student responses. The teacher expected the student to follow the incomplete sentence form written on the screen without uttering the DIU orally. Research on DIUs in face-to-face classroom or instructional contexts have not reported on written forms of DIUs that participants use (Koshik, 2002) and its use to build student responses but focused more on its corrective usage. The temporal order in which written and spoken sentences are employed or the lack of employment of a specific mode may be explored in a future study.

There exists tension in language learning classrooms between the provision of an appropriate amount of support and the promotion of independent contributions. The instructor may desire to reinforce the independent production of student turns and simultaneously afford a beneficial level of assistance to promote language learning. This study found that DIUs could be used to serve

both of these purposes. DIUs acted similar to "word retrieval elicitors" (Radford, 2010): the teacher fabricates an incomplete phrase by specifying a partial model that cues students to complete the phrase/clause by using their own semantic resources. If a student fails to fill in the missing components, the instructor may help by postulating a list of examples from which the student may choose from (e.g., Extract 5).

The current study only investigated a single teacher's actions in an online language classroom temporarily deployed in the Korean cultural context during the COVID pandemic. Therefore, the described interactions cannot be deemed representative of events occurring in online L2 classrooms in other sociocultural settings. There are resources other than DIUs that are employed by the teacher in the online setting that may have been overlooked in the current study. These practices include the teacher's use of topicalization (e.g., fronting the prepositional phrase "in the morning") and multiple remarks on visual accessibility of the student's face (e.g., "I can't see your eyes/face"), which may be explored in future studies on online instructional discourse. Further research is also necessary to examine the actions performed apropos DIUs in different classroom contexts with multilingual users and in face-to-face instructional environments. This study highlighted the importance of analyzing multimodal aspects of communication via online educational platforms to comprehend the cooperative practices required to instantiate the online learning community's "epistemic ecology" (Goodwin, 2013). The finding may contribute to developing an empirically informed understanding of members' methods for accomplishing teaching and learning.

Data Availability

Data will be made available on request.

Appendix A. Transcription conventions (adapted from Jefferson, 2004, Mondada, 2019 & Mortensen, 2014)

- arrows in the margin point to the lines of transcript relevant to the point made in the text
- ° ° talk between symbols is quieter than surrounding talk
- BOLD** talk in both bold text and underlining indicates stress or emphasis
- > < talk between symbols is faster than surrounding talk
- °hh inbreath, the length of the inbreath is roughly proportional to the number of 'h's.
- (h) laughter within a word
- (0.4) numbers in parentheses indicate period of silence, in tenths of a seconds
- (.) silence of less than 0.2 s
- a hyphen indicates an abrupt cut-off or self-interruption of the sound in progress indicated by the preceding letter(s)
- [] beginning and end of overlapping talk
- = latching of talk to the immediately preceding talk (can be between two words or between two turns)
- :: colons indicate a lengthening of the sound just preceding them, proportional to the number of colons
- ? rising intonation
- . falling to low intonation
- (,) falling to mid-level intonation
- (guess) problematic hearing
- (()) comments on talk
- * * Descriptions of embodied actions are delimited between
- + + two identical symbols (one symbol per participant and per type of action)
- △ △ that are synchronized with correspondent stretches of talk or time indications.

*-> The action described continues across subsequent lines
 -->* until the same symbol is reached.
 >> The action described begins before the excerpt's beginning.
 -->> The action described continues after the excerpt's end. .
 fig The exact moment at which a screen shot has been taken
 # indicated with a sign (#) showing its position within the
 turn/a time measure

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