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Change of Epistemic Stance of Transnational Pre-Service Teachers in-and-through Collaborative Data-led Reflective Dialogues[a]

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Abstract

This study explored collaborative data-led reflective dialogues of transnational PSTs by using Multimodal Conversation Analysis. The study draws on the screen recordings of a Virtual Exchange (VE) project (n=72), which involves collaborative online task design, implementation of tasks by L2 students, and reflection on students' performance and their experience of the VE project. The close examination of the data showed that through collaborative reflective dialogues, PSTs (i) raised awareness of their practice and generated knowledge; (ii) made a connection between theory and practice; (iii) became more aware of their epistemic stance; (iv) identified and described a problem and found solutions to these problems (Farrell, 2015). Therefore, micro-moments of learning and understanding were created in-an- through reflection and it was revealed explicitly through reference to lack of knowledge in the past. This study has implications for teacher education programs, which should encourage reflective dialogues of transnational PSTs to create opportunities for teacher learning.

Keywords: teacher education, teacher learning, data-led reflection, power asymmetry, collaboration

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Introduction

With the emergence of sociocultural approach to learning and teaching, teachers and students are now seen as social agents in interaction, which has led to changes in teacher education programs (Wright, 2010). Freeman and Johnson (1998) define teacher education as a term explaining how a teacher learns to teach and how teacher trainers educate trainees to be teachers professionally by linking expert knowledge and experiential knowledge, helping teachers to gain new understandings of their teaching and themselves (Johnson & Golombek, 2016). Opfer and Pedder (2011) suggest that four orientations lead to better teacher learning: (1) field and classroom experience; (2) opportunity for reflection; (3) opportunity for understanding oneself in a secure environment under challenging or novel circumstances; (4) applied knowledge about teaching and learning. Therefore, reflection has taken its place in teacher education programs to provide pre-service teachers (PSTs henceforth) with the experience they need.

The word reflection originated from a Latin word which involves the act of looking back and noticing. "Reflective practice is: A cognitive process accompanied by a set of attitudes in which teachers systematically collect data about their practice, and while engaging in dialogue with others use the data to make informed decisions about their practice both inside and outside the classroom." (Farrell, 2015, p.140). In teacher education, reflective skills encompass the ability to find solutions to questions (Jay & Johnson, 2002) and problems observed (Dewey, 1933) drawing upon past experiences with a future orientation. Thus, it enables teachers to critically observe their practice and gain new insights. This underscores the cruciality of equipping teachers with reflective skills in teacher education (Beauchamp, 2015; Brookfield, 2017; Farrell, 2016b; Kumaravadivelu, 2006), and many scholars advocate integrating reflection into teacher education programs (e.g., Dikilitaş & Comoglu, 2022; Turhan & Kirkgöz, 2021). Reflective dialogue between trainer and trainees has been explored through Conversation Analysis (CA henceforth) (Keogh, 2010; Skovholt et al., 2019; Walsh & Mann, 2015; Waring, 2013,

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2014, 2017) and other domains of research (Copland, 2008, 2011; Copland et al., 2009; Golombek, 2010; Strong & Baron, 2004). Nevertheless, there is a dearth of empirical studies which investigate how reflective practice enhances teaching (Ayoobiyan & Rashidi, 2021) and what happens when student teachers reflect on the implementation of their designs as a group without the guidance of a trainer. To wit, encouraging transnational student teachers to reflect on their task design experience and student performances without the presence of any mentor/trainer or someone who implies epistemic asymmetry may create opportunities for teacher learning. A close examination of such a practice merits further study as it may contribute to better understanding of reflective talk in LTE. We believe that without an urge to fit their ideas to a trainer's (Beck & Kosnik, 2002; Bonilla & Rivera, 2008; Farr, 2010) or without guidance and assessment of a trainer, how PSTs topicalize and generate learning merits exploration. CA enables to explore the "black box" of such dialogues (Ishino, 2018) and can provide evidence for the change of epistemic stance. With these in mind, this study sets out to be the first to explore epistemic change of PSTs in their reflective dialogues in situ. To do so, collaborative data-led reflective dialogues of transnational pre-service teachers are explored by using robust methodological tools of multimodal CA.

Literature Review

Reflective practice has gained popularity with the social turn in SLA, as a result of which teachers have come to be considered active agents in social acts rather than solely information-providers. According to Dewey (1933), reflective practice refers to "active, persistent, and careful consideration of any belief or supposed form of knowledge in the light of the grounds that support it" (p.6). Teacher reflection involves observing one's own actions systematically to make criticism and finding alternative action solutions to their criticism (Korthagen, 2014). Hence, reflection should not be reduced to revising past actions as it requires teachers to criticize themselves (Hickson, 2011) so that they can finetune their ideas and practices. Also, Mau and Harkness (2020) advocate for collaborative reflection instead of individual reflection. Although reflection is foregrounded by looking at back, it is supposed to involve future orientation to reach a lifelong critical level in reflection (Turhan & Kirkgöz, 2021). There exists conflict over the definition of reflection and its practice. Accordingly, Walsh and Mann (2015, p.352) problematized reflective practices: "it is (i) insufficiently data-led; (ii) heavily focused on the individual at the expense of collaborative options; (iii) dominated by written forms of reflection; (iv) lacking in detail about the nature and purposes of reflective tools."

Depending on the time it is practiced, reflective practice can be categorized as reflection-in-action, reflection-on-action, or reflection-for-action (Dewey, 1933). Reflection-in-action refers to the practice of finding a solution to a problem by the time it occurs, and reflection-on-action refers to recalling of teaching practice. Lastly, reflection-for-action refers to the mode of reflection which involves considering possible problems to be encountered in the future, and accordingly, making plans. This kind of reflection can also derive from the experience gained through reflection-in-action and reflection-on-action. (Farrell, 2015). PSTs' reflection consists of three processes: (1) description, (2) interpretation, and (3) alternatives. In the first step, PSTs describe a situation, then they evaluate the situation and lastly they come up with alternative action proposals (Kleinknecht & Gröschner, 2016). There are two levels of reflection: individual and collaborative (Murray, 2010). Individual reflection refers teachers' reflection on their own while collaborative reflection requires teachers to share their reflections with other teachers. Turhan and Kirkgöz (2021) found that collaborative reflection helped PSTs to extend their understanding affording them to examine a situation from different perspectives. Farrell (2016a) found out that novice teachers could overcome the difficulties of transition from theoretical knowledge to practice in their initial experience of teaching through a teacher reflection group. On the other hand, Farrell (2016b) avoids making the claim that reflection results in better teaching performance. but concludes that through reflection, teachers' awareness of philosophy, principles, theory, and practice was raised, which may enhance teaching.

Reflective teaching, action research, and teacher research indicated the importance of teachers' experiences and reflection, and how experiences and reflection inquiries lead to professional development. Through reflective practice, teachers' less observable practices come into view (Freeman, 2016) and it triggers professional development (Korthagen, 2014; Schön, 1983). Reflective practice enables teachers to explore their practice from the perspective of students and to advocate for development in their practices (Dikilitaş, 2015), to more extensively develop an understanding of teaching (Crandall & Christison, 2016), to increase their self-efficacy in teaching (Pedro, 2005), to improve their resilience (Ayoobiyan & Rashidi, 2021; Hong, 2012) to compare their previous knowledge and their new experience and to redesign their knowledge based on this comparison (Burton, 2009), to raise awareness of routinised practices of professionals (Caswell & Dall, 2022), to have growing identity (Dikilitaş & Mumford, 2023) and to improve their knowledge and practice (Richards,

1995). Besides, it provides opportunities for teacher learning (Balaman, 2023) and constructs teacher learning (Waring, 2017) as reflection affects not only behavior but also the cognition of teachers (Huth et al., 2019). Reflective practice aims to (1) raise individuals who do not consume knowledge but generate it, (2) bridge the gap between theory and practice, (3) make teachers more aware of their beliefs and practice through evidence, (4) identify, describe and solve a problem through evidence-based approach, (5) increase self-esteem and self-confidence of teachers and (6) raise resilience of teachers by preparing them for future problems and changes (Farrell, 2015).

Trainer/mentor-teacher reflection bears asymmetric power (Harris et al., 2019; Kim & Silver, 2021; Vasquez, 2004; Waring, 2014) by which reflective dialogue is prone to be affected by trainer/mentor guidance, questions and assessment. To cultivate reflection, teacher trainers could be less directive and give enough space for PSTs' participation (Copland et al, 2009). However, giving enough space may not diminish the asymmetry. For instance, Veen and de la Croix (2016) indicated in their study that PSTs could manage the topic, take turns and interrupt turns when they presented a case, however tutors navigated the interaction in general by opening and closing activities, facilitating reflection and leading discussion. Furthermore, Skovholt (2018) found that although the teacher in the study creates space for students to convey their ideas, her pedagogical goal may urge her to guide students to give preferred answers in feedback oriented conversation. Namely, trainers tend to manipulate trainees' ideas and put across their ideas. In other words, trainers' ideas surpass what trainees think and trainees' ideas are only valued if they resonate with the ideas of the teacher trainer (Copland et al., 2009). PSTs may not show if they do not agree with the trainers and tend to seem to agree (Beck & Kosnik, 2002; Bonilla & Rivera, 2008; Farr, 2010). The asymmetry may also lead trainers and PSTs to apply some face-saving strategies. In a recent study, Bjørndal (2020) deduced that when PSTs get critical feedback, they use various face-saving strategies as critical reflection is seen as a face-threatening act while Vasquez (2004) discovered that trainers/mentors employ various politeness strategies to save teachers' face in post observation meetings. Besides, Waring (2017) concluded that mentors tend to "go general" as an interactional strategy in post-observation conversations to depersonalize advice.

Heritage (2013, p. 370) asserts that "within Conversation Analysis (CA), research into epistemics focuses on the knowledge claims that interactants assert, contest and defend in and through turns-at-talk and sequences of interaction." The knowledge of interactants may vary from unknowing (K-) and knowing (K+) ends of gradient (Heritage, 2012a, 2012b, 2013) and epistemic status can be claimed and shown in the unfolding of conversation in situ. Sacks (1992) differentiates between claim and demonstration (of understanding) in his seminal work. While claim of understanding does not guarantee that understanding occurs or not, understanding is somehow shown in interaction in demonstration of understanding. Then, Koole (2010) extends the notions as claim and display of knowing and understanding. Lately, Sert and Walsh (2013) investigated claim of insufficient knowledge (CIK [also see Beach & Metzger, 1997 for CIK in courtrooms])in an educational context. It is sufficient to say that epistemic is not a static notion and it may change from K- to K+ in situ, which may be shown, for instance with the change of state token "oh" (Heritage, 1984).

Against this background, this study aims to reveal how the epistemic status of PSTs was revealed and changed in and through collaborative reflective dialogues without a presence of a teacher trainer. Therefore, building on the growing literature on reflection, the study explores video-mediated data-led reflective dialogues of transnational PSTs and sets out to bring conservation analytic evidence for epistemic change of PSTs.

Method

Research Context and Participants

The data of this study came from the DIGITASK4IC project. The project aims to create a sustainable application for virtual exchange tasks to improve interactional competence (IC) of second language learners. It lasted 18 months and data were collected in the academic year 2021-2022. 18 researchers from four partner universities from three countries worked for the project (Austria, Spain, and Türkiye). Depending on the courses offered, three partner university (Austria, Spain, and Türkiye) and two non-partner universities (Tunisia and Türkiye) were involved in data collection process.

In this study, there were two broad groups of participants: PSTs and students. PSTs were registered at the partner universities of DIGITASK4IC project. In the scope of the classes they were enrolled to, they were supposed to improve their skills regarding online task design. Students were enrolled to classes at different

universities than partner universities of the project which aims to better their English IC. For the purposes of this study, only the data coming from PSTs' reflection meetings were used in this study. In other words, as the secondary group participants, students who performed the tasks provided data to PSTs for reflection. It is this aspect that makes the reflective dialogues data-led. PSTs reflected on their task design and implementation by using the actual data coming from student performances rather than relying on intuitions and hypothetical practices. Besides, they did so collaboratively by engaging in meaning making in and through interaction. Therefore, L2 IC of the students was not tracked for this study.

The number of PSTs was 72 and they formed 21 groups of 3-4. There were 17 PSTs from Austrian, 13 PSTs from Spanish, and 42 from Turkish university. They were BA or MA students in language departments, and they were trained to use online tools and prepare online tasks. PSTs were required to design a virtual exchange task in groups for the students. On the other hand, students in dyads were required to perform tasks created by PSTs. The number of students was 60 and they constituted 30 dyads.

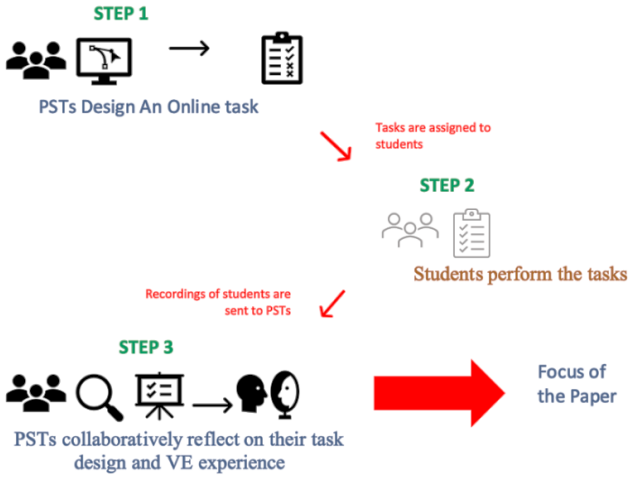
Data Collection

All the participants were required to have virtual exchange with their peers within the scope of the classes they were enrolled. The virtual exchange was conducted on MS Teams and built-in screen recording tool of the program was utilized besides licensed Screencast-O-Matic (SoM). All the participants had access to license of SoM and each participant recorded their own screen to decrease the risk of data loss.

Before data collection process started, pre-service teachers were trained on common creative (CC) licenses, designing an online task and how to use Digitask web application. A guideline for work packages were introduced to the PSTs. By the time all the preparation by the project team was completed and PSTs were prepared to design an online task, data collection process started. Data was collected in three steps: (i) Task Design Conferences, (ii) Task Engagement, (iii) Reflection (see Figure 1 below). The current study deals with the data which comes from the final step of data collection procedure, namely reflection. Nevertheless, to provide a comprehensive picture of the data collection, all steps are touched upon in the paper.

Figure 1

Data Collection Steps



Throughout the steps of data collection, the participants were instructed to record their screen by using SoM and built-in screen recording tool of MS Teams. In the first step, PSTs engaged in virtual exchange meetings to design a virtual exchange task with their group members on Digitask web application. In sum, they had five virtual exchange meetings to design a task with the teacher trainers' feedback. There was no limit for duration of the meetings and duration varied across groups. PSTs were supposed to prepare tasks according to the task design criteria. According to the criteria, they needed to prepare task on the topic assigned to their group. Topics are as follows: "Getting to know each other", "Language Learning Biographies", "Language in the Public Space", "Language Varieties", "Lingua Franca", "Communication styles", "Multilingualism", "Inclusive Language" and "Final Reflection Task". The tasks should have real-life learning objectives with clear goals, create learning opportunities for students, integrate different skills, be suitable for online task settings, and last about 30 minutes.

Once the PSTs finalized their task design at the end of five virtual exchange meetings, their tasks were assigned to the students. Each task was assigned to eight or nine dyads of students. In this way, PSTs could see how their task was performed by various student dyads.

Preceding the third step of data collection, which is reflection, screen-recordings of the students were sent to PSTs to furnish data for their reflection. PSTs watched the screen-recordings individually, and lastly, they had two meetings to reflect on their task design experience, collaboration, and student performances (see Figure 1 above). Reflections were conducted without a teacher trainer or mentor. However, guiding questions were presented to PSTs to enable them to reflect. In the first reflection meeting, PSTs were supposed to share their observations on the recordings of student performances and in the second reflection meeting, they assessed the entire experience referring to guiding questions. Thus, the participants needed to reflect on collaboratively with their team members and they were supposed to so by referring to students' actual performance data, thereby making it data-led. Therefore, the setting urged the participants for collaborative data-led reflection. The work package for each reflection meeting and guiding questions on the guideline are as follows:

Table 1

Guide for Reflection

Meeting	Guiding questions
Meeting 6	Share your observations on the recordings you viewed (How was the task implemented? / Did learners behave like you expected? Did learners do something you had not anticipated? / Was the task successful?)
Meeting 7	Group Reflection Part 2 & Closing. Collaboratively assess the entire partnership this semester with reference to the lessons learned (What did you learn? What would you do differently in a future collaborative task design? Was the project useful for your future professional life as a language teacher?)

Data Analysis

The data from the reflection meetings is approximately 18 hours. They study adopts Multimodal CA to analyze the data. Multimodal CA is a bottom-up research methodology that recognizes that interaction is a complex interplay of verbal utterances, prosody, gestures, body language, gaze and artefacts. Multimodal CA approaches the data without any pre-determined hypothesis or questions (Hutchby & Wooffitt, 2008). Therefore, unmotivated looking and transcription and lastly line-by-line rigorous analysis underlie the steps of multimodal CA. Accordingly, first, orthographic transcriptions were prepared. In this step, only verbal utterances are transcribed and there is no detail of prosody and embodiment. Then, through unmotivated looking, that is letting the data speak without imposing pre-determined categories and external theories (ten Have, 2007), commonly occurring practices were identified. Next, collection of these practices was built and lastly, detailed transcripts were prepared following the transcript conventions (Jefferson, 2004; Mondada, 2018). We have found out that PSTs claim lack of knowledge referring to their epistemic stance in the past (see Table 2 below). Unknowing status in the past was topicalized with various lexicon and syntactic markers such as "didn't know" (7 cases), "I wasn't thinking/I didn't think" (7 cases), "had no idea (2 cases), "didn't expect" (1 case), "didn't foresee" (1 case), "never grasped" (1 case), "imagined" (1 case), "wasn't aware of" (1 case), and "was abstract at first" (1 case) . Four representative extracts from the dataset are presented to show epistemic change of PSTs.

Table 2

Collection- Lack of Knowledge in the Past

	Number of Cases
Didn't know	7
I wasn't thinking/I didn't think	7
Had no idea	2
Didn't expect	1
Didn't foresee	1
We never grasped	1

	Number of Cases
Wasn't aware of	1
Abstract at first	1

Findings

We selected four representative extracts from our dataset to show how micro-moments of learning and understanding were created in reflective dialogues of PSTs. Representative extracts were chosen regarding various lexicon to refer to lack of knowledge in the past and topic of teacher learning. By doing so, we aim to show the range of teacher learning across topics, as well. We have found that by reflecting on a gap or problem in the past, PSTs display their awareness of knowledge gaps in the past. Therefore, we conclude that they have extended their learning trajectories as their epistemic status has changed from K- (less knowledgeable) to K+ (more knowledgeable). In the transcripts, we have followed Jefferson (2004) and Mondada (2018) transcript conventions (see Appendix).

In extract 1, PSTs claim learning or extended knowledge of Common Creative licenses on which they were trained by teacher trainers before data collection procedure started. They use unknowing epistemic markers (K-) to show their lack of knowledge or topicalize how their knowledge is extended.

Figure 2

Extract: Didn't Know

```
1  LIN: yeah (0.3) i learned that too (.) now about (.)licenses
2       and everything ♣i mean i already knew♣ (0.8) um
   der                 ♣---------nods-----♣
3       (1.0)
4  DER: we didn't [know
5  LIN:           [knew about that but not in detail and
6       now ♣i'm (1.0) also more conscious of that [aspect♣
   der       ♣-----------------nods---------- ---------♣
7  EMI:                                          [yeah
```

Note. ♣: Multimodal actions of DER

The extract starts with LIN's use of an acknowledgement token (`yeah`) (Jefferson, 1984). In the same turn, she claims learning (`i learned that`) of common creative licenses. DER shows alignment with this claim of learning in line 2 with a nod. Then in line 2, LIN highlights her knowing epistemic status (K+) (Heritage, 2013) in the past (`i already knew`). After a lengthy silence of 1.0 second, DER takes the turn and points to their insufficient knowledge in the past in line 4 (`we didn't [know`). She uses the first-person plural pronoun to involve her peer EMI, who is a student at the same institution as herself. DER's statement was overlapped with LIN's extension of her previous turn. In line 5, LIN highlights her epistemic status in the past as knowing (K+) once more. However, in the remaining of the turn, she indicates her knowledge of licenses was not detailed and she is more aware now which is accompanied with DER's nodding. In the last line, EMI shows alignment with an acknowledgement token.

Extract 1 shows participants' orientation to their epistemic status in the past and at the time of reflection. LIN opens the turn with a claim of learning which was then explained with comparison to her epistemic status in the past. Although LIN mentions her epistemic status as K+ in line 2 and 5, she mentions that her knowledge on common creative licenses has been extended and detailed in line 5 and 6. Her structure as "knew about that but not in detail" implies an extension in her epistemic stance. Besides, her expression of her epistemic stance from "I learned" to "I already knew" and then to "knew about that but not in detail" shows how she regulates her ideas (see Heritage, 2012a, 2012b, 2013) in and through reflection. On the other side, DER involves her peer from the same institution by using a first-person plural subject pronoun (we) and shows their lack of knowledge in the past with a negation in line 4. Therefore, it is obvious that there is a change of epistemic status of DER and maybe EMI who shows alignment with a minimal token in line 7. Therefore, this extract showed that, the process helped pre-service teachers to extend their already existing knowledge and to form new knowledge. All in all, they had

the chance to evaluate their experience and regulate their epistemic status during reflective dialogues with their peers.

In their previous dialogues before extract 2, PSTs have problematized the disappearance of their instructions on the interface of the application and how this affected students' performance. Before the extract starts, GOK reads one of the guiding questions given to them: what would you do differently in a future collaborative task design? The extract starts with his alternative action proposal on the materials they have chosen.

Figure 3

Extract 2: We didn't Foresee

```
1  GOK: ♣↑one♣ thing (.) for sure (0.8) i would prepare
        ♣points♣ with index finger
2       my materials (0.7) that (0.7) can be (0.4)
3       understood (.) by their own
4       (1.5)
5       ♥if ♠instructions are lost (.) the students need to
  jas   ♥nods--->
  sev       ♠nods-->
6      ♣understand the task♠ (.) as (1.0) ↑well as they can(.)
       ♣shakes head side to side--->
  sev                    --->♠
7      by just looking at the materials (0.8) so this could be
8      a solution♥ for our case♣(1.0) because er in ↑our table
  jas         --->♥
                              --->♣
9       (.) they (0.9) discovered what to do (1.3) ♣ they see♣
                                                  ♣---1----♣
       1: points to the top of the frame
10      some gender err exclusive words and they ♣ (0.8) er
                                                 ♣draws a round
                                                 with index finger-->
11     ♣found (.) the opposite one ♥they found the gender♥
      -->♣
  jas                                ♥---------nods----------♥
12     neutral one ↑it was clear (0.3) er maybe (.) our (0.5)
13     ♣other♣ materials (0.6) could have been (.) as clear
       ♣shakes♣ head to right
14     (0.3) as ♥ (.) the last ones♥ (1.2) this could can be
  jas           ♥--------nods-------♥
15     a change
16     (4.0)
17     ♥because we didn't foresee♥ (.)this problem (.)to happen
  jas  ♥--------------nods----------♥
18     (.) but it ↑happened ♥ (0.8) so♥ (1.0) maybe i err
  jas                       ♥---nods---♥
19     think.hh (.) wider
```

Note: ♣: Multimodal actions of GOK, ♥: Multimodal actions of JAS, ♠: Multimodal actions of SEV

Extract 2 starts with GOK's highlighted initiation for alternative action proposal (`i would prepare`) (Kleinknecht & Gröschner, 2016; Korthagen, 2010). In lines 2 and 3, he suggests choosing self-explaining materials for the task. YAS and SEV show alignment by nodding in line 5. After a lengthy silence in line 4, he starts elaborating on his proposal in line 5. From line 5 to 7, he elaborates on proposing self-explaining materials for the task with an if clause. In line 7 and 8, he declares his alternative action proposal as a solution to the problem (`this could be a solution`). Then in the remaining of line 8, he starts giving an account of his alternative action proposal. From line 8 to 12, he describes a situation he observed in students' performance. He gives account by referring to how students managed to discover what they were required to do in line 9 (`they (0.9) discovered what to do`) and in line 11 (`found (.) the opposite one`) and YAS shows alignment

by nodding. Then in line 12, he adopts an evaluative stance and shares his ideas about the table (it was clear). After a mitigation token (maybe) in line 12, he repeats his alternative action proposal in line 13 and 14. His alternative action proposal was one more time aligned by YAS in line 14 by nodding. In the remaining of the line 14 and in line 15, GOK highlights his alternative action proposal as a solution to the problem they have encountered once more. After a quite long pause in line 16, GOK gives an account (because we didn't foresee (.)this problem (.)to happen) and verbalizes their K- (Heritage, 2012a, 2013) epistemic stance in the past. Then, in line 18, he declares that they have encountered the problem which they did not foresee (but it ↑happened). Following a transition marker (so) and mitigation (maybe), he refers to his extended epistemic stance in the present (i err think.hh (.) wider) in lines 18 and 19.

The extract shows that their observation of students' performance and reflection helped pre-service teachers to extend their perspectives of teaching. As already mentioned by GOK, in the last line of the extract, all the process and critical reflection on it enabled them to have a wider point of view as they have encountered unexpected situations in students' implementation. So, critical reflection played an important role in their knowledge formation and extension.

In extract 3, PSTs refer to the problem they have encountered during their virtual exchange experience regarding a time difference between countries of partner universities and reflect on this problem with a future orientation.

Figure 4

Extract 3: Wasn't Thinking

```
1   VIK: uh >especially talking about< ca international collaboration
2        (0.5) that some things aren't that obvious so
3        ♣if you're talking about okay we should
  mer:   ♣plays with his chin ---> line 10
4        meet ♦we (.) organize a meeting (.) at the first time
  eli:        ♦smiles--->line 15
5        i wasn't even thinking about a time difference
6   ELI: $hah hah$
7   VIK: it was like okay yeah that's true we have to organize er um
8        (.)on that regard as well (0.6) so all the orga-
9        organizational aspects (.) of (0.5) an international
10       collaboration↓ (.) and i think♣
  mer:                              --->♣
11       this is quite helpful if you think about maybe doing some (.)
12       things (.) similar with your future students (0.7) because
13       ♥there's so much around (.)the task itself♥
         ♥----------rolls her hands----------------♥
14       (0.6)that ♣ (.) shouldn't be forgotten (0.4) and i think♣
  mer:             ♣--scratches his head with left index finger--♣
15       it's good to experience that er one ♥time♦ (1.0)♥♦
                                            ♥nods and smiles♥
  eli:                                          ♦--nods--♦
  eli:                                               --->♦
```

Note: ♣: Multimodal actions of MER, ♥: Multimodal actions of VIK, ♦: Multimodal actions of ELI

Extract 3 starts with an elaboration of VIK on international collaboration. In line 2, she touches upon the unclarity of the process (some things aren't that obvious) by adopting an evaluative stance. With reference to the possibility of organizing an international meeting, she verbalizes her K- epistemic status in the past about considering the time difference between various countries (i wasn't even thinking about a time difference) in line 5 and by doing so she refers to a gap and claims lack of experience. Then, in line 6, ELI responses to VIK's claim with a laughter. From line 7 to 10, VIK refers to their own experience and explains what they needed to do as a part of international collaboration. In 11 and 12, we see how VIK adopts an evaluative stance (this is quite helpful) towards the experience and evaluates it to be helpful for their future career (maybe doing some (.)things (.) similar with your future students). What follows is her statement about what she has gained awareness of and her action proposal (♥there's so much around (.)the task itself♥ that ♣ (.) shouldn't be forgotten). Lastly, in line 15,

she adopts an evaluative stance one more time (it's good to experience that er one ♥time♦) and clearly states that to experience an international collaboration was good (also see Lortie, 1975).

The extract shows that although VIK was not aware of considering the time difference in an online collaboration at the beginning, her awareness was raised after her experience as a pre-service teacher in the project. As a prospective teacher, she orients to the future and displays her takeaway of considering time difference in the case of conducting such a process in her future career. We witness an epistemic change from K- in the past to K+ in the present as she refers to a gap in her epistemic stance in the past. So, with the process of task design, feedback, students' data and reflection, VIK's awareness of different aspects to be considered while conducting an online collaboration has been raised and the takeaway lesson was negotiated and became apparent during reflection.

Before Extract 4 starts, DER talks about the individual differences she has observed while watching students' recordings and how students comprehended and performed the task in unexpected ways.

Figure 5

Extract 4: Didn't Think- We Know

```
1   DER: of course we don't think that everybody thinks it's the
2        same way↑ but like ♣seeing that especially♣
                           ♣unites finger while palm♣is up
3        ♣oh i didn't think of this i didn't think of that♣
         ♣-----------puts finger on the head--------------♣
4        [((inaudible))
5   LIN: [((inaudible))
6        the small things ♥also (0.6) th the timing ♣we talked
                          ♥looks up--->
    der                                                ♣leans forward--->
7        about♣ (.) because♥ (0.4) yeah ♥we we know it with our
    der   --->♣
                       --->♥              ♥scrolls right hand--->
8        screen castomatic right now we have technical problems
9        ♣ (.)♣ it is (0.8)it can happen all the time and you have
    der  ♣nods♣
10       to♥ calculate tha:t (.) maybe ♣because (0.4) wh♣ what we
        -->♥
    der                                  ♣--slightly nods--♣
11       saw in the tasks (0.5) ♣er was also (0.4) that♣ maybe
    der                             ♣-----leans forward------♣
12       they needed more time and ♥they couldn't do: ♣ (0.4) one♥
                                    ♥-----shakes head side to side---♥
    der                                                 ♣nods--->
13       situation♣ or something like that (0.7) ♣because of♣ te
    der       --->♣                                 ♣slightly nods♣
14       (.) technical issues ♣ (0.5) and that's also♣ something i
    der                          ♣strongly nods and averts gaze♣
15       (.) i $learned out of this$ haha (.)♣because if you are
    der                                          ♣smiles --->
16       in a setting♣ especially ♥(0.7) erm in a setting (0.3)
    der           --->♣
                                    ♥looks up --->
17       that the students are not ↑used to♥ ♣ (.) because they
                                         --->♥
    der                                      ♣strongly nods--->
18       have to get to know each other (0.4) and (.) and♣ stuff
    der                                                  --->♣
19      it's (1.0) ♣it's something tha:t (.) that is important
    der:             ♣leans forward--->
20      to think about♣ (.) what (.) how much time do they nee:d
    der:            --->♣
```

Note: ♣: Multimodal actions of DER, ♥: Multimodal actions of LIN

The extract starts with DER's display of their epistemic stance (of course we don't think) (also see Koole, 2010). She mentions that they are aware of the fact that everyone thinks in a different way. However, she also highlights how they have observed this fact when watching student performances (seeing that especially). In line 3, she refers to her K- epistemic status in the past (oh i didn't think of this i didn't think of that), which she became aware of after watching students' unexpected ways of comprehension and behavior. In line 6, LIN initiates by adding up to DER's problematization and starts delivering a proposal (the small things ♥also (0.6) th the timing) and giving account (because) in line 7. Then, she indicates their (+) epistemic stance (we know it) at the time of speaking by referring to a technical problem with screen-recording software (screencast-o-matic) in their own virtual exchange experience (our screen castomatic right now we have technical problems). In line 9, she verbalizes that the problem they have encountered may always occur (it can happen all the time). Next, she proposes that they need to consider this (you have to♥ calculate tha:t) in lines 9 and 10 as an action proposal. In the remaining of line 10, she initiates giving an account of her proposal in lines 10 and 11 (because (0.4) wh♣ what we saw in the tasks) by referring to students' video-recordings. In line 12, she continues account giving and points to a gap that students needed more time to perform the task (they needed more time and ♥they couldn't do:). In lines 13 and 14, she starts giving an account of the students' performance by referring to technical issues. Then, she explicitly claims learning (that's also♣ something i (.) i $learned out of this$) (Sacks, 1992) in lines 14 and 15 by referring to what she described in her turn previously. She goes on with account-giving in line 15 by elaborating on her account and adopting an evaluative stance (it's something tha:t (.) that is important) and lastly, she refers to the take-away lesson again.

We have seen in Extract 4 that although PSTs expected students to be different from each other, their perception of how unexpected they can be is extended through watching students' performance. In addition, PSTs display their experience on technical problems and the gap they have noticed while students perform the tasks, and they reflect on them. They come to the conclusion about considering the setting while defining time to perform a task. The extract showed how PSTs orient to their own experience as a learning opportunity. How their virtual exchange experience and watching students' performance helped them to notice the gap were topicalized and learning was claimed regarding task time. Therefore, their epistemic stance has changed from K- to K+ in and through reflection.

Discussion

In this study, we have examined how data-led reflection was achieved by transnational PSTs using the micro lenses of multimodal CA. We have found that reflection creates micro-moments of learning and understanding from the participants' own orientation.

As proposed by Kleinknecht and Gröschner (2016), reflective dialogues of PSTs involve three processes: description, interpretation, and alternatives. PSTs first describe a problem or a gap, adopt an evaluative stance and find alternative solutions to problems. In doing so, they deliver accounts, claim lack of knowledge in the past, and K+ epistemic stance in the present. To show the change in their epistemic stance, they deliberately use syntactic markers and lexicon such as "didn't know", "wasn't thinking", "didn't foresee", "didn't think", "learned" and "we know".

Collaborative reflective dialogues of the PSTs had various affordances which is in line with previous research (Farrell, 2015). First, PSTs enhanced understanding of themselves and produced new insights. For instance, in extract 2, GOK generated knowledge on task materials. By referring to other materials they had used, he proposed all the materials could be as comprehensible as possible even without instructions. Also, in extract 3, it is obvious that VIK generated insight based upon her experience regarding organizing international collaboration. The change in her epistemic stance from K- end to K+ end of the gradient enables her to generate knowledge about organizing international collaboration with her future students. Similarly, in extract 4, PSTs speak of a common problem faced by both of them and students. On the grounds of their experience with SoM (see Methodology section), they concluded to set time in an online task design by considering the setting and context as online settings might bring out technical problems. Second, they established connection between theory and practice. In the second extract, GOK drew on students' performance in his extended turn (i.e. line 9 (they (0.9) discovered what to do)) and with regard to his observation, he regulated his theoretical knowledge. Furthermore, in extract 4, although PSTs were trained on online task design, they have generated

knowledge and made connection with theory and practice. Only after they watched how their task was performed, they could realize that they needed to consider the setting and problems that students might face with. Third, they raised awareness of their knowledge and epistemic stance. One of the most explicit examples is seen in Extract 1. Following the claim of learning, LIN claims knowing in the past as well (yeah (0.3) i learned that too (.) now about (.)licenses and everything ♣i mean i already knew♣ (0.8)). In the remaining of the extract, she deploys how her knowledge was extended. Therefore, the extract showed how the participants became aware of their knowledge status in situ during their reflective dialogues. Moreover, in Extract 2, GOK claimed K- epistemic stance in the past (we didn't foresee♥ (.)this problem (.)to happen) which was followed by his explicit claim of extended epistemic status (i err think.hh (.) wider). Extract 3 indicated that VIK gained new insight about international collaboration which is obvious through her explicit claim of K- status in the past (i wasn't even thinking about a time difference). Furthermore, PSTs displayed their present and past epistemic stance regarding individual differences. They depicted that their epistemic stance was extended which is specifically shown with a surprise token (oh) (Goffman, 1978). In addition, they claimed knowing that technical problems are prone to happen in online settings (we know it with our screen castomatic right now we have technical problems). Finally, they identified problems and generated solutions to these problems. Prior to extract 2, PSTs had problematized disappearance of the instructions in their task. In extract 2, GOK proposes alternative solution to this problem by selecting more self-explanatory materials. In extract 3, VIK touched upon an organizational problem they had encountered. Then, by adopting a future-orientation, she proposed to consider time difference between countries in any international collaboration. Therefore, the problem they had experienced paved the way to teacher learning. PSTs in extract 4 problematized the time they had given to students as students could not finish the task properly. They elaborate on the problematization by giving example from their virtual exchange experience which is followed by a take-away lesson regarding timing and online settings. Thus, their identification of problem ended up with proposing solutions (Korthagen, 2014) by giving reasons.

Besides, as mentioned above, PSTs explicitly referred to students' performances in their collaborative reflection. Extract 2 and 4 displayed how their observation shaped their learning. In both extracts, PSTs' problematization of students' performance led them to generate solutions; thus, marking the crucial role of data in shaping learning (Walsh & Mann, 2015). In other saying, video has been a useful tool for observation (see Körkkö, 2019; Körkkö et al., 2019). The current study also revealed that PSTs generated solutions and knowledge on various topics based upon their observation and problematization. The range of topics varies. Extract 2 indicated that PSTs' observation and problematization of disappearance of instruction paved the way to generate knowledge on material selection. They proposed to choose more self-explanatory materials in such a setting. Extract 3 showed that PSTs generated knowledge on organizing online collaboration. They proposed to consider time difference between countries when organizing online collaboration with their future students. In extract 4, they concluded that online settings are prone to technical problems, and they need to consider this while setting time. Therefore, we see proposing alternative solutions as generating knowledge practice of PSTs as well. They topicalize learning and orient to the future despite the lack of a teacher trainer and guidance on-site. Besides, beyond the guiding questions on the guideline, they formulate their turns to give an account of the problems and alternative solutions, adopt evaluative stance, and propose alternative solutions. Namely, they do not perceive reflection as a repair tool (Hickson, 2011), but take it as a tool for teacher learning for their future career (see Turhan & Kirkgöz, 2021). Moreover, they explicitly express their future-orientedness.

In contrast to prior studies that examine reflection with a presence of a teacher trainer (e.g., Skovholt et al., 2019; Waring, 2017), it is clear that PSTs' turns are quite extended as they elaborate on their answers in the extracts without a power asymmetry (Harris et al., 2019; Kim & Silver, 2021; Waring, 2014). Thus, we propose that PSTs could express themselves without an urge to fit their ideas to a teacher trainer or they found their own way without any manipulation by a professional (Beck & Kosnik, 2002; Bjørndal, 2020; Bonilla & Rivera, 2008; Copland et al., 2009; Farr, 2010; Skovholt, 2018; Vasquez, 2004; Veen & de la Croix, 2016; Waring, 2017) which led to different turn structure unlike IRF (Initiation, Response, Feedback) patterns in a typical teacher directed settings (Mehan, 1979).

The findings of the study indicated that the epistemic status of the participants moved from the unknowing end to the knowing end of the gradient (Heritage, 2012a, 2012b, 2013) upon various teaching practices, which was claimed or shown though talk-in-interaction (Koole, 2010; Sacks, 1992). All in all, reflection led to a claim of teacher learning (Balaman, 2023; Opfer & Pedder, 2011) and the findings support the proposal of integrating reflection into language teacher education programs (e.g., Dikilitaş & Comoglu, 2022; Turhan & Kirkgöz, 2023). As detailed above, through collaborative reflective dialogues, PSTs (i) raised awareness of

themselves and generated knowledge; (ii) made connection between theory and practice after watching students' performance; (iii) became more aware of their knowledge and epistemic stance; (iv) identified and described a problem and found solutions to these problems (Farrell, 2015). Therefore, microanalytic lenses of CA offered insights into how PSTs reflected (also see, Ishino, 2018) and how micro moments of learning and understanding were created in and through reflection, and the study contributed to the literature on epistemics (Heritage, 2012a, 2012b, 2013; Koole, 2010; Sacks, 1992; Sert & Walsh, 2013) through a claim of insufficient knowledge in the past regarding teaching practices.

The current study presented the affordances of data-led collaborative dialogues among PSTs. It is evident that data (from student performances) and collaboration played important roles in reflective dialogues of transnational PSTs by giving them the chance to collaboratively reflect on real practices, leading to genuine and interactional reflections. PSTs could enhance teacher learning upon various topics. Furthermore, being part of a transnational group enabled them to collaborate with their peers from diverse cultures and backgrounds, thereby globalizing teacher education (Koskela et al., 2023). We conclude that data-led collaborative reflection (Farrell, 2016a, 2016b; Turhan & Kirkgöz, 2021; Walsh & Mann, 2015) should be encouraged as an integral part of LTE programs rather than merely perceived as a repair tool (Farrell, 2018). We also put forward that various practices through which PSTs can gain understanding on educational ecology should be integrated to LTE programs and PSTs should be urged to reflect on them to generate knowledge and be aware of their epistemic stance. Therefore, for further research, we recognize the value in exploring reflective dialogues on various contexts more thoroughly by adopting conversation analytic research methodology. Future studies can also focus on benefits of data-led, collaborative, and transnational reflection and how teacher learning is shaped in situ.

Code of Ethics

Ethical Clearance was granted from the Ethical Committee at Hacettepe University on 12.04.2022 with the number of decision E-35853172-300-00002138909.

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Ulusötesi Öğretmen Adaylarının Epistemik Duruşlarının İşbirlikçi Veri Odaklı Yansıtıcı Diyaloglar İçinde ve Aracılığıyla Değişimi

Öz

Öğretme ve öğrenmeye sosyal odaklı bakış açısını takiben, yansıtıcı düşünme, öğretmen adaylarını yetiştirmede önemli bir pedagojik araç olmuştur. Bu çalışma, Çok kipli Konuşma Çözümlemesi kullanarak bir eğitmen olmaksızın ulusötesi öğretmen adaylarının iş birliğine dayalı veri odaklı yansıtıcı diyaloglarını incelemektedir. Çalışma, iş birliğine dayalı çevrimiçi görev tasarımı, görevlerin gerçek yabancı dil öğrencileri tarafından uygulanması, ve öğrencilerin performansı ve sanal değişim projesi (s=72) deneyimleri üzerine yansıtıcı düşünmeyi içeren bir sanal değişim projesinin ekran kayıtlarından yararlanmaktadır. Çalışmanın odak noktası, öğretmen adaylarının iş birliğine dayalı video aracılı veri odaklı yansıtıcı diyaloglarıdır. Verinin yakından incelenmesi, iş birliğine dayalı yansıtıcı diyaloglar aracılığıyla öğretmen adaylarının (i) uygulamalarına ilişkin farkındalıklarını artırdıklarını ve bilgi ürettiklerini; (ii) teori ve uygulama arasında bağlantı kurduklarını; (iii) epistemik konumlarının daha fazla farkına vardıklarını; (iv) bir sorunu tanımlayıp tarif ettiklerini ve bu sorunlara çözümler bulduklarını göstermektedir (Farrell, 2015). Dolayısıyla, öğrenme ve anlamaya dair temel anlar yansıtıcı düşünme esnasında ve yansıtıcı düşünme yoluyla ortaya konmuştur. Bu çalışma, öğretmen öğrenimi için fırsatlar yaratmak amacıyla ulusötesi öğretmen eğitimi programlarında öğretmen adaylarının yansıtıcı diyaloglarını teşvik etmeye dair çıkarımlarda bulunmaktadır.

Anahtar kelimeler: öğretmen eğitimi, öğretmen öğrenimi, veriye dayalı yansıtıcı düşünme, güç asimetrisi, iş birliği

Appendix

Jefferson (2004) Transcription Convention

[ ]	Overlapping utterances – (beginning [) and (end])
=	Contiguous utterances (or continuation of the same turn)
(0.4)	Represent the tenths of a second between utterances
(.)	Represents a micro-pause (1 tenth of a second or less)
:	Elongation (more colons demonstrate longer stretches of sound)
.	Fall in pitch at the end of an utterance
-	An abrupt stop in articulation
?	Rising in pitch at utterance end (not necessarily a question)
CAPITAL	Loud/forte speech
	Underline letters/words indicate accentuation
↑↓	Marked upstep/downstep in intonation
° °	Surrounds talk that is quieter
hhh	Exhalations
.hhh	Inhalations
he or ha	Laugh particle
(hhh)	Laughter within a word (can also represent audible aspirations)
> <	Surrounds talk that is spoken faster
< >	Surrounds talk that is spoken slower
(( ))	Analyst notes
( )	Approximations of what is heard
$ $	Surrounds 'smile' voice

Mondada (2018) Multimodal Transcription Convention

* *	Gestures and descriptions of embodied actions are delimited between
+ +	two identical symbols (one symbol per participant)
Δ Δ	and are synchronized with corresponding stretches of talk.
*--->	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.
.....	Action's preparation.
----	Action's apex is reached and maintained.
,,,,,	Action's retraction.
ric	Participant doing the embodied action is identified when (s)he is not the speaker.
fig	The exact moment at which a screen shot has been taken
#	is indicated with a specific symbol showing its position within the turn at talk.