Social Interaction

Video-Based Studies of Human Sociality

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Collaborative and Cross-Modal Accomplishment of Practical Accord in a Video-Mediated Learning Situation

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Abstract

Carrying out collaborative activities in video-mediated learning settings requires constant interactional work to maintain alignment between participants' actions and the use of virtual and material artifacts (also known as 'practical accord'). This study uses screen recorded data and multimodal conversation analysis (CA) to present a case analysis of an extended sequence in interaction where a group of learners has been divided into two groups, and they encounter a difficulty in sharing materials with each other during a momentary breakdown of the learning platform. The analysis shows how the teacher and learners deploy multiple channels of communication, including spoken interaction, the chat interface and WhatsApp, to accomplish practical accord in a progress-wise manner. It is also shown how verbal (i.e., both spoken and written) and embodied resources are coordinated from the moment when the trouble emerges to the point when a solution is found. The study highlights the accomplishment of practical accord as a complex cross-modal process where collaborative practices are key. The findings have implications for both research and teaching, as they can help design tasks for online learning.

Keywords: practical accord, video-mediated interaction, multimodality, crisis management training

1. Introduction

Previous literature has highlighted competences around routine operations with structured material and digital objects key for collaborative task accomplishment. These competences can be described through the notion of practical accord, which according to Mlynář (2021: 163), "allows us to examine certain aspects of observable courses of action that are related to establishing and maintaining an alignment between structured objects". The objects in collaborative activities can be worksheets, notebooks and screens, or anything that can be seen to function as part of the "organizational hub" of the situation (Sakai et al., 2014; see also Greer & Leyland, 2020). In co-present settings, the affordances for organizing interaction with and around structured objects are facilitated by access to the situational contingencies and mutually organized embodied conduct. This means that the participants can hear, see and manipulate relevant materials which can also make solving troubles related to misalignment between one's actions and the use of the artifacts straightforward. In contrast, in synchronous online settings where participants are in different locations, perspectives on structured objects, which can be both digital and material, differ partly because one cannot know for sure what others see on their screens. This also makes the production and interpretation of social conduct related to these objects a complex matter.

There has been an increasing interest in studying the organization of interaction in video-mediated learning situations. While some findings have been made on teachers' practices to facilitate participation (e.g., Badem-Korkmaz & Balaman, 2022), there are also others that illustrate the ways in which the technological environment features as part of learner-learner interaction (e.g., Oittinen, 2022; Pekarek Doehler & Balaman, 2021; Sert & Balaman, 2021). Findings on the ways in which digital objects can be used as part of collaborative activities have been recently made (see e.g., Balaman, 2021 on collaborative writing), but the resources and practices by which troubles related to the accomplishment of practical accord can be solved are currently unknown.

This study uses screen recorded data from a crisis management course to investigate a moment during which a group of learners that has been divided into two smaller groups encounters difficulties in sharing materials relevant to the ongoing pedagogical activity. These are partly due to the momentary breakdown of the learning platform. The paper presents a single case analysis (see Schegloff, 1987) depicting the moment-by-moment unfolding of the situation, which includes 1) the initial moment when a learner indicates her wish to share something with co-participants, 2) the moment when access to the materials is established among participants in the same Zoom room, and 3) the negotiation that takes place in order to share the materials with those group members who are in a different Zoom room. Using multimodal conversation analysis (CA), I illustrate the participants' collaborative and creative ways to solve the problem through the utilization of various channels of communication and

coordination of verbal, embodied and screen-based resources. The analysis highlights the accomplishment of practical accord as a complex cross-modal process that calls for orientation to the sequential and temporal organization of actions in both spoken and written interaction. The findings shed light on emerging practices in video-mediated learning environments, which can be used to inform future educational practice and task design in online teaching and learning (see also Sert, 2019).

2. Theoretical Background

2.1 Material objects in collaborative work and learning

Practices of collaborative work have been extensively studied in earlier social interaction research, including the fields of workplace studies, linguistics, and education. During the recent years, materiality and ways in which objects are used in dyadic and multiparty situations has drawn a lot of attention (e.g., Goodwin, 2013; Goodwin & Goodwin, 2023; Heath & Luff, 2020; Hindmarsh & Heath, 2000; Lindwall & Mondada, 2024). Research on co-present situations has shown how objects, such as paper documents, writing equipment and computer screens, can become part and parcel of collaborative activities and a key element in the "organizational hub" of social conduct (Sakai et al., 2014; see also Greer & Leyland, 2020). Furthermore, focusing on the use of material and digital objects as part of collaborative work over the computer, Due and Toft (2021) found that the sociomaterial setting (e.g., embodied configuration) afforded the participants with a range of resources with which to advance the interaction and establish mutual understanding.

Studies on educational settings, in particular, have focused on ways in which embodied conduct and material objects feature in teacher-student interaction (e.g., Majlesi, 2014) and in peer interaction, such as during joint task accomplishment (e.g., Jakonen, 2015). In their study on lesson planning talk, Greer & Leyland (2020) illustrate how material objects can, through participants' actions (e.g., gazing, pointing and touching), become inscribed objects that facilitate turn progression and advance the activity at hand (see also Day & Mortensen, 2020). In a similar vein, studies on advice-giving sequences in writing tutorials have shown how worksheets and paper copies may help establish intersubjectivity and concordance between what is discussed and what is visible in a written form (e.g., Leyland, 2020). Furthermore, Hazel and Mortensen (2019) point out how objects in the classroom can become important situated resources for eliciting contributions from the students (see also Kirby, 2020). Overall, this body of work has been highly influential in shaping our understanding of ways in which teachers and learners coordinate their conduct in and outside the classroom and how they mobilize material objects for organizing interaction in and for the accomplishment of pedagogical and professional activities.

Practical accord is a concept used to describe how social actions are produced in concert with the use of material objects in educational settings (see Mlynář, 2021). It is defined as the correspondence between the material and digital artifacts and sequentially organized conduct (Mlynář, 2021: 147). In his study on a high school students' group work situation, Mlynář (2021) illustrates how troubles related to practical accord can emerge from a dismantle between orders of action on a printed exercise sheet and what is visible on the computer screen. The notion of practical accord offers a fruitful starting point for the present study where the focus is on unraveling the situated practices learners in a distributed participation framework deploy to obtain access to and correspondence between the materials relevant to the ongoing activity.

2.2 Digital objects in collaborative video-mediated settings

Video-mediated educational settings have been studied to an increasing extent during the past decade. A lot of this work has focused on unraveling the detailed organizations of interaction in diverse settings and technological configurations (for an overview, see Jakonen et al., 2022). Many findings have been made on the challenges of video-mediated instructional settings (e.g., Malabarba et al., 2022), but also the affordances they provide for the participants (see e.g., Oittinen, 2023a, 2023b; Balaman & Pekarek Doehler, 2022).

A body of work has focused on the interactional organization of video-mediated learning situations, focusing on both teachers' and learners' practices. For instance, findings on collaborative writing between peers have illustrated how work on a joint document makes relevant certain entitlements and roles related to what is being produced (Balaman, 2021). Other studies have also highlighted the role of the shared screen and digital objects, such as the cursor, in the accomplishment of joint attention and intersubjectivity (e.g., Oittinen, 2023a; Badem-Korkmaz & Balaman, 2022). Furthermore, some work has been done to unravel the ways in which teachers can elicit responses from students, for instance in question-silence-answer sequences (see Hochuli & Jud, 2023). Troubles in video-mediated learning situations have been found to emerge partly because the participants lack access to each other's physical environments and embodied actions, which can be consequential in targeting next speakers and advancing interaction (see e.g., Oittinen, 2022). On the other hand, many studies have yet highlighted the resourceful ways in which participants use situated resources, such as the chat interface and shared documents, to take part in the ongoing activity (e.g., Oittinen, 2023b).

There are some studies that have focused on the interactional organization of moments when multiple channels of communication are used. Gibson (2014) presents findings from a learning situation in which spoken and written forms of interaction were deployed, concluding that the adjacency of turns was difficult to maintain due to the differing sequential orders of the spoken and written

interaction. Focusing on the use of the chat interface in a video-mediated crisis management course, Oittinen (2023b) also found that including written turns in spoken interaction requires close coordination of verbal, embodied and screen-based actions and situated attentiveness to the details of social conduct. These studies have thus highlighted the complexities of maintaining alignment between actions that are produced simultaneously via different channels of communication. However, ways in which participants utilize different channels and resources to share materials relevant to the ongoing activity and solve issues related to it in situ is still an understudied area.

3. Data and Method

The data for the study come from a two-week crisis management course that was organized in an online environment for the first time in 2021. The topic of the course was the protection of civilians in crisis areas and the objective to prepare learners to make assessments of threats in real crisis management missions. The course lasted for 10 days, and it consisted of individual tasks (i.e., self-study), daily whole group sessions, and intensive daily small-group work. There were altogether eighteen learners in the course and a varying number of teachers. The data total 90 hours of screen recorded footage from whole and small-group sessions in which the teachers and learners communicated using the videoconferencing platform Zoom. The participants in the data come from diverse institutional and cultural background, and their expertise on the topic of the course and overall experience in the field varies. The course language was English, which most of the participants speak as a second language. The study participants in the data gave their permission to be recorded by signing an informed consent.

The situation in question is from a small-group session comprising altogether five learners (Ilkka, Cam, Kimi, Oili and Stacy) and an instructor, Tomi, whose task was mainly to monitor the work but also help if need be (e.g., with the task instructions). At the beginning of the day, it had been announced that the learning platform where all the materials are shared is down. The group has been split into two teams for the duration of accomplishing two separate tasks related to threat assessment, and they are working in two different Zoom rooms. As part of the work, they use digital materials, such as readings and a map of the imaginary scenario, and prepare a power point presentation. Ilkka and Cam, who are in the same team, have just returned from a lunch break and are about to continue their work. During the break, Cam has created a table related to the group task and expresses her wish to share it with the others. During the four-minute sequence that follows, the trouble related to sharing the material is first verbalized by Cam, after which both Ilkka and Tomi attend to the problem and try to come up with a solution.

The method of analyzing the sequence is multimodal conversation analysis (CA), which allows for a detailed examination of the participants' verbal and embodied conduct (see Mondada, 2014; see also Schegloff et al., 1974). CA is a fruitful approach to the study of situated social actions in technology-mediated settings, in that it can help unravel how participants themselves orient to and render visible resources and practices by which to advance interaction and establish mutual understanding, then and there. The transcripts for spoken interaction have been prepared following the conventions of Jefferson (2004), and for multimodal conduct (e.g., gaze and gestures), Mondada's (2018) conventions are applied.

4. Collaborative and Cross-Modal Accomplishment of Practical Accord

The analysis section shows how the participants utilize multiple channels of communication, including talk, the chat interface and WhatsApp, to solve the problem of sharing the materials and accomplish practical accord in a progress-wise manner. The analysis is divided into three sections that depict 1) the initial moment when the need to share the material is flagged, 2) the learners' solution to sharing the materials with participants in the same breakout room, and 3) the moment when the instructor intervenes, which ultimately results in finding a way to share the material among the whole group (i.e., also with those in the different Zoom room). Special attention is paid to the situated resources and practices the participants deploy to collaboratively manage the situation and negotiate the proposed solutions.

4.1 Making the need to share the material relevant

The first extract depicts the moment when Cam and Ilkka have just returned from lunch break. Before this, Ilkka and Tomi have been chatting while waiting for Cam. Ilkka has also summonsed Cam who has not yet made an audible return (i.e., they all took the break leaving the connection open but turning off their cameras and microphones). Once Cam checks in verbally and by turning on her webcam, Ilkka starts immediately to transition into task-related talk (Lines 1-3). However, the transition is interrupted by Cam who expresses her wish to share materials relevant to the activity which she has prepared during the break. Therefore, finding a way to make sure that everyone gets access to the materials (i.e., ensuring practical accord) takes precedence in the moment and the ongoing activity.

Extract 1. *"Can I just ask you"*

```
1   Ilk    okay we will stay in the: syndicate room and *the others
    cam                                               *puts camera on
2          are in the subgroup (.) ↑so (.) we should look at the:,
3          the center of gravi↑ty,
4   Cam    ↑yeah (.) lis↓ten. (0.2) can I just ask you +(.) I-I did this,
    ilk                                               +nods twice
5          table during lunch and I want to £share£ it with you,
6          *uhm: (0.2) what's you:r uhm emai-(.) what's your- ^(  )
    tomi   *smiles--->*
    cam                                                ^turns off
                                                       mic and camera
7          ^let me: (0.3) *ugh,
    cam    ^turns on mic and camera-->>
    tomi                  *mutes mic
8   Ilk    e[mail?    ]
9   Cam     [like your-] (.) uh ↑no (.) well yeah, ^e- (0.3) n↑o (.)
    cam                                            ^turns off camera--->^
10         not email (0.2) email isn't working, (0.2) uhm I've taken
           photographs of it,
11         <can you: uhm> (.) just give me your phone number and,
12         I will send it to you on whatsapp?
13         *(1.0)+#(1.3)
    tomi   *widens smile, manipulates headset
    ilk         +gaze down, starts moving hands--->+
    fig         #1
```


Figure 1. Tomi smiles widely. Ilkka gazes down and starts moving hands.

```
14  Cam    hello?
15  Ilk    yeayeayeah yeah.
16         (1.0)
17  Ilk    I- I'm typing and +I'm a man (0.2) I can't speak and type
    ilk                      +glances at screen
18         at the same time.
19  Cam    o:h (.) ok↑ay.
20  Ilk    eh he he
21         (2.8)
```

The extract begins with Ilkka's comment on the procedure they will follow: Cam and Ilkka will stay in the main room while the others are in a breakout room (line 1-2). In the same turn, Ilkka also accomplishes a transition into task-related talk and mentions the topic they should discuss (i.e., the center of gravity; line 3). Cam interrupts the transition with an acknowledgment, 'yeah', and a request to

hold on. She then continues the turn with a question-prefacing formulation, 'can I just ask you', which she also elaborates with an account regarding what she has done during the break (i.e., a table which she now wants to share) (Lines 4-5). Along with some difficulties with the video tool, Cam starts formulating a question to Ilkka, in which she produces a part of the word 'email' ('emai-', Line 6). However, Cam's turn is cut short because she all of the sudden turns off her camera and mic. Thus, only the beginning of the turn is audible to the others. Once she turns on the camera and microphone, she produces a formulation, 'let me', which functions as an account for doing something with her device (see also Balaman & Pekarek Doehler, 2021). Having heard only parts of Cam's verbal turn prompts Ilkka to check for understanding (i.e., if it is his email address that Cam wants), which Cam first hesitatively negates, then confirms but then negates again, now more emphatically ('no'). With this turn, Cam acknowledges the fact that she has, indeed, mentioned email herself in the prior turn, but the negation is explained through her inability to use her email (Lines 9-10). After this, Cam continues with an elaboration in which she explains having taken photographs of the table which she would like to share in some way. Cam comes up with another solution (i.e., she could send the photos via WhatsApp) and asks for Ilkka's phone number (Lines 11-12).

During a 2.3-second pause that ensues, Tomi produces a wide smile, which indicates a level of amusement related to the episode (Fig. 1), and Ilkka visibly orients to typing (see also Oittinen, 2023b). However, it may be the case that Cam does not see these actions, since she orients to the lack of response from Ilkka and summonses him (Line 14). Ilkka first acknowledges this and then offers an explanation for the silence from his side (i.e., his inability to type and talk at the same time). This highlights the challenge of coordinating multiple simultaneous activities in speaking and writing (see also Gibson, 2014). Cam accepts the explanation and lets Ilkka complete the written turn. The extract shows how the need to share task materials is made relevant by Cam's verbalization, which also results in suspending the ongoing activity. At this point, the instructor, Tomi, takes the role of an observer and lets the learners try to solve the issue by themselves.

4.2 Establishing access to shared materials among participants in the same Zoom room

What happens next is negotiation related to the materials Cam has sent to Ilkka via WhatsApp. Once Ilkka comes to a recognizable completion of the writing (i.e., he accounts for it verbally; Line 24), Cam asks him to confirm that he has received the table. This visibility check regarding the sent content at this moment is important, since it helps ensure that access to the materials is now shared and thereby functions as the first step towards accomplishing practical accord.

Extract 2. *"Can you just check"*

```
22  Ilk    and uh, e:::r (0.3) wa↑it,
23         (3.0)
24  Ilk    a::n+d ↑done +(0.3) and you should see that now.
    ilk        +presses button
    ilk               +leans back

25         (2.0)
26  Cam    okay can you just check to see if +you've received anything
    ilk                                      +turns to right, grabs phone

27         from me?
28         (2.2)
29  Ilk    +#there's something in- in whatsapp (0.2) at least,
    ilk    +turns upper body fw, gaze down to phone--->+
    fig     #2
```

Figure 2. Ilkka gazes down at his phone.

```
30         (3.0)
31  Ilk    mhm↑mm.
32  Cam    do you see it?
33  Ilk    ah ye- this is uh this u::h,
34         (2.5)
35  Ilk    ∘no:∘ the[re's a lot of-
36  Cam             [really?
37  Ilk    pictures (0.2) there's a lot of pictures
38  Cam    there's three tabl[es.
39  Ilk                      [↑yea-
40  Cam    I've broken it down,
41  Ilk    yeah I can find those [those are-
42  Cam                          [can you sha-
43  Ilk    there's uh (.) first there [is something]+(.)
    ilk                                        --->+glances up
44  Cam                               [can we sha- ] (.)
45         can we share it with O̲ili?
46         +(2.1)
    ilk    +blows air, gaze still down
47  Ilk    +<fo:r=sure::>
    ilk    +turns gaze twd screen--->+
48  Cam    how can we get it on to ou:r (0.3) how can we get it to Oili?
49         (1.3)
```

The extract shows the moment when Ilkka finishes writing his phone number and sends it to Cam via private chat (i.e., it does not become visible in the public chat interface; Lines 22-24). The silence in line 23, along with Ilkka's embodied orientation (i.e., gaze down), indicates him being engaged in the writing activity. Upon its completion, Ilkka makes it explicit that Cam is now supposed to see the phone number. After a silence of 2.0 seconds, Cam asks Ilkka to check if he has received a message from Cam. Already towards the end of the question, Ilkka turns to his right, after which he responds saying that there is 'something' on WhatsApp (Line 29). Ilkka gazes still down, and a pause ensues (Fig. 2), after which he displays a token of acknowledgment which prompts Cam to pose an explicit question of whether he sees it or not (Line 32). After a token that displays Ilkka's noticing ('ah'), accompanied with a cut-off acknowledgment ('ye-'), he hesitates and indicates being in a state of searching for a word to describe what he sees (Line 33; see Hayashi, 2003). Then, there is another silence that is followed by Ilkka's soft negation (see Lerner & Kitzinger, 2019) and further elaboration of the seeing. Cam produces an adverb 'really' with a rising intonation and in overlap, by which she indicates her surprise related to Ilkka's inability to see the photographs she has just sent (Line 36). When Ilkka continues with an expression regarding what he sees ('a lot of pictures'), Cam corrects the wording to 'tables' (i.e., an embedded correction; see Jefferson, 1983) which Ilkka confirms that he sees (Line 39 and 41). While Ilkka continues to verbalize what is visible to him on WhatsApp (Line 43), Cam already starts orienting to the next thing to do: sharing the materials with the rest of the group in the other Zoom room. She first indicates her lack of knowledge regarding if it can be done ('can we share it with Oili') and then problematizes it explicitly with a question 'how can we get it to Oili?'. This way, she not only engages the co-participants with joint problem-solving but also orients to them as potentially more knowledgeable.

Passing the material on to Ilkka in the same Zoom room has consisted of making use of the private chat interface and an alternative communication channel separate from the system (i.e., WhatsApp). It has also included of verbalizations of the distributed content. In this interactional context, accomplishing joint seeing verbally is important in that it helps inform the participants about the exact moment when mutual access, and thereby intersubjectivity related to the relevant materials, is reached (cf. Oittinen, 2023a). It also functions as a prerequisite to what happens next.

4.3 Solving the trouble related to sharing materials across Zoom rooms

By raising the question of how the tables can be shared to the learners in the other Zoom room (Line 48), the learners initiate another problem-solving sequence part of the accomplishment of practical accord. Cam's turn is important in that it concerns a party that is not part of the same participation framework but needs to involved in the activity. The following extract illustrates

how the preceding moment and actions taken have not been entirely clear to Ilkka, and how the misaligning actions of Ilkka and Cam result in Tomi's intervention, which helps solve the problem (Lines 59-61).

Extract 3. *"Is this only to me"*

```
48 Cam    how can we get it on to ou:r (0.3) how can we get it to Oili?

49        (1.3)

50 Ilk    u:h (.) this is uh, (0.3) to:: (0.2) is this uh only for ↑me?
51        o[:r¿
52 Cam     [no I wanted to send it to everybody: in our syndicate (0.2)
53        I've- (0.2) because I did it over lunch (.) and I think

54        it will answer the questions ~#(.) it gives the locations of
   tomi                                ~raises gaze and chin, smiles--->~
   fig                                 #3
```
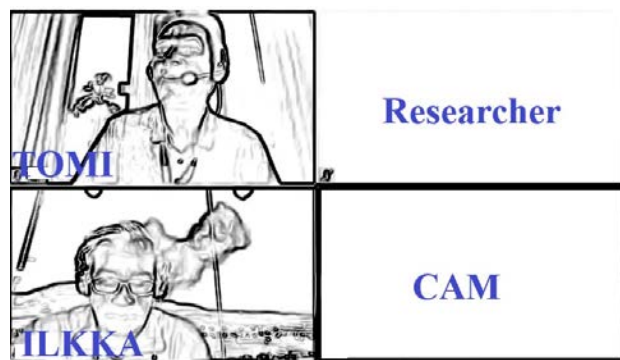

Figure 3. Tomi raises his chin high and smiles.

```
55        where reve~nge is taking place and who it is happening to,
   tomi          --->~lowers chin and turns gaze to screen

56 Ilk    yeah (.) ~↑now (0.2) now you have u:h (0.4) I think, (0.2)
   tomi            ~unmutes

57        I'm not sure is this personally for me onl↑y,
58        or is this also: (0.2) is this also visible to all the teams¿

59 Tomi   Cam (0.2) I have the email addresses so if you send it-
60        send it the photos to: email so I will pass them in the email
61        to people that's will be okay? (0.3) [fin-
62 Cam                                         [the pro- I'd love it but,

63        there's s(h)o(h)m(h)ething wrong £I can't seem to£
64        send an email at the moment ~#on my (organisation name) u:hm,
   tomi                                ~turns gaze up--->~
   fig                                 #4
```
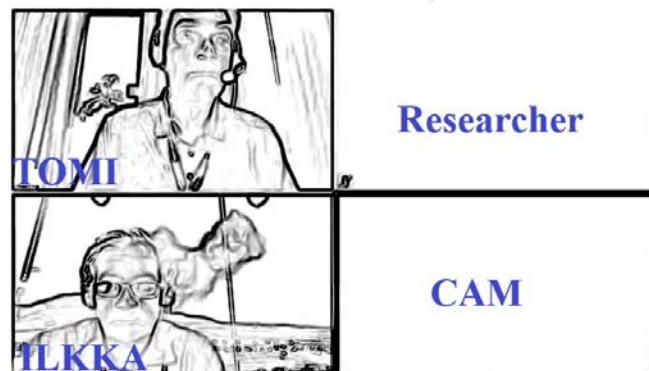

Figure 4. Tomi turns gaze up.

```
65          laptop. (0.3) it's shut down so I've taken pictures of it,
66          and I (.) I think it's worth using (.) if we could just get
67              ~the pictures to ~somebody that might (.) be able to
     tomi    --->~gaze to screen--~then up again
68          put them in the tables again.
69          (1.0)
```

The extract begins with Cam's question which is followed by a silence. After a silence of 1.3 seconds, Ilkka starts to respond but with some hesitation. It yet soon becomes clear that Ilkka is unsure of who the target recipient of the WhatsApp message is. By gazing down at his phone, he asks if the message Cam sent earlier was only to him (Line 50). Concurrently with Ilkka's turn-final particle, 'or' (see Drake, 2015), which he utters with a slightly rising intonation, indicating a level of uncertainty, Cam produces a negative response and elaborates on her reasons for sending the message: she wanted to inform everybody in the group what she found during the break (Lines 52-55). At this point, it is thus unclear if the message was sent to Ilkka alone or to the small group's WhatsApp channel. During Cam's turn, Tomi raises his chin and gaze up and smiles (Fig. 3), as if having just now realized what Cam is trying to say (see also Gudmundsen & Svennevig, 2023 on change-of-state face). Once Cam completes the turn, Ilkka indicates his understanding ('yeah'; line 56) but tries to explain his confusion regarding the message itself (i.e., if the message was sent only to him or the whole group). In the midway of Ilkka's turn, Tomi unmutes himself, which also functions as an action that indicates his attempt to take the floor. Once Ilkka comes to a recognizable conclusion, Tomi addresses Cam by name (Line 59). He then produces an account regarding his access to everyone's email addresses and offers to pass on the materials via email. However, Cam reminds him that she cannot use her email due to the unexpected difficulties. She prefaces the turn with a compliment ('I'd love it') that mitigates the but-prefaced rejection that follows (Line 62). When Cam continues with an explanation regarding why she has taken the pictures, Tomi turns his gaze up and keeps it there, which could be seen as a "thinking face" (see Hayashi, 2005). Towards the end of Cam's turn, Tomi glances briefly at the screen before turning his gaze up again, which indicates that he is still engaged in thinking about a solution (Fig. 4).

The last extract shows how a solution is found and the situation is resolved. This entails proposals produced by all three participants, of which two are initiated in overlap (Lines 69-72), and a failed attempt to show the tables via Zoom. Although Cam is the one to suggest the use of WhatsApp again (Line 71), the proposal that results in the resolution of the moment comes from Ilkka who recycles Cam's idea (i.e., using WhatsApp; Lines 87-88).

Extract 4. *"The easiest way"*

```
69  Cam     uh- uh To- To[mi ca- what's your- what's  ]
70  Tomi               [if it's can yo- (0.2) okay  ] (.)

71  Cam     [could I whatsapp it to you?]
72  Tomi    [can you-  (.)     can you ] actual~#ly show it to me ~(.)
    tomi                                          ~swings hand
    fig                                           #5
```


Figure 5. Tomi swings hand in front of the camera.

```
73          I wil- I will take a photograph uh photograph out of it and
74          that's uh one way and I will send it [to: Oili.
75  Cam                                          [↑a:h (.) okay, (.)
76          >hang on [hang on< I will show it to you
77  Tomi            [~I will take a photograph with my camera.
    tomi             ~grabs phone, turns gaze down
78  Cam     love it (.) I love what you're saying [hang on-
79  Tomi                                          [okay.
80  Cam     I(h)'m s(h)o(h)rry. (0.3) it's because I'm on my stupid phone
81          right okay here we ↓go (.) ↓right ^(0.4) can you see this?
    cam                                        ^turns on camera, moves it--->
82          +*#(2.0)
    ilk     +leans forward
    tomi     *leans forward
    fig       #6
```


Figure 6. Tomi and Ilkka lean closer to their screens.

```
83  Ilk     eh he he
84  Tomi    £.hhh£
85  Cam     no?
86  Tomi    no,

87  Ilk     ^the easiest way is that uh if Tomi ^(0.2) you will give her
    cam     ^starts turning camera-------------^shows own face
88          your telephone number (.) she can send like (.)
89          I got them [[(0.2) in]
90  Cam                [yeah.    ]
```

```
91          whatsapp and then [you can-
92   Tomi                     [right-
93   Ilk    and then you can share them or o:r, relay them [to:
94   Tomi                                                   [okay.
95   Ilk    to (.) others [o:r,
96   Cam                   [thank you (.) thank you Tomi (0.2) erh it's not
97          a sneaky way to get your phone number (.) £don't worry.£
98   Tomi   eh he I will send it—
```

The extract illustrates how Tomi's intervention takes new forms compared to the previous extract. Unlike in the earlier phases, Tomi takes an active role in finding a solution to sharing the materials to the rest of the group members. The extract starts by Cam and Tomi producing their proposals at the same time (Lines 69-72), after which their turns continue to overlap for a while. To draw the co-participants' attention, Tomi swings his hand so that his palm faces the screen (Fig. 5). Once Cam ceases talking, Tomi completes his request for Cam to show the materials (i.e., pictures) over Zoom so that he can take a picture. Cam responds to the proposal with an acknowledgment token, 'ah', after which she agrees with what is suggested (Line 75). Then, Cam uses the expression 'hang on', repeating it twice, to buy time and account for the delay in producing the relevant next action (cf. Balaman & Pekarek Doehler, 2021), which is the showing of the pictures. At the same time, Tomi explains further what he is going to do.

Cam praises Tomi's suggestion but faces some difficulties making the pictures visible, for which she accounts by repeating 'hang on' (Line 78). She also apologizes for the delay and gives an explanation (i.e., she is using her phone to connect with the others). After this, Cam produces a boundary marker ('right okay') and a showing-prefacing account, 'here we go' (Line 81). These are followed by a particle, 'right', and Cam's actions of turning on the camera so that the pictures become visible. When Cam shows her phone placing it very close to the screen, she asks explicitly if Tomi and Ilkka can see it ('can you see this', Line 81). During a silence of 2.0 seconds, both Tomi and Ilkka move closer to their screens (Fig. 6), after which Ilkka makes a laughing expression. Tomi takes an audible inbreath, which Cam interprets as trouble-indicative (i.e., she utters 'no' with a rising intonation; Line 85). Tomi also confirms that he cannot see the image (Line 86). After the failed attempt to share the materials by showing them via Zoom, Ilkka makes another proposal which he formulates as an assessment regarding the easiest way to proceed (Lines 87-88). With the proposal, Ilkka recycles the solution that they have already used successfully once, when Cam shared the materials to Ilkka (i.e., using WhatsApp). Tomi immediately accepts the proposal, and Ilkka continues with guidance for what to do once having received the materials. After this and Tomi's agreeing response, Cam thanks Tomi for making the effort and humorously comments on the reasons for needing Tomi's number (Line 96-97).

5. Concluding Discussion

This paper has investigated the negotiation of a problematic moment of sharing materials and accomplishing practical accord in a video-mediated learning situation where a group of learners has split into separate breakout rooms in Zoom for the duration of the task. It has done so by using multimodal conversation analysis (CA) to investigate an extended sequence from a screen recorded session of a crisis management course with a special focus on learners' and instructor's actions.

The findings show the complexity of sharing materials in a video-mediated learning situation where the participants are in different physical and digital spaces, and how this requires the utilization of multiple channels of communication at the same time. The analysis depicted how the participants make use of the affordances of spoken interaction, the chat interface and WhatsApp, to solve the moment and accomplish practical accord in a progress-wise manner. It showed 1) the unfolding of the initial moment when the need to share the material was flagged, 2) the learners' practices around finding a solution to sharing the materials with participants in the same breakout room, and 3) the moment when the instructor intervened, which ultimately resulted in finding a way to share the materials among the whole group (i.e., also with those in the different breakout room). What need to be highlighted are the participants' situated resources and practices to collaboratively manage these moments and coordinate their actions. The role of verbal conduct, such as the production of proposals and verbalizations of joint seeing (Extracts 1 and 2), and one's ability to coordinate temporally aligning verbal, embodied and screen-based actions (e.g., speaking and writing) across modalities, and not just within them (Extracts 3 and 4), were highlighted as key. The fact that the person who initiated the sharing of the materials used their phone was also shown to have consequences in the way in which the sequence unfolded. This was particularly pertinent in ways troubles related to mutual understanding were raised (e.g., by Ilkka) and solved. In addition, there was some misalignment between the participants' actions, which seemed to be connected to the use of multiple devices and platforms at the same time.

The study contributes to earlier research on the use of material and digital objects in learning situations (e.g., Greer & Leyland, 2020; Majlesi, 2014), illustrating how "concerted action" around structuring objects (Mlynář, 2021) presents a practical problem in settings where participants are not in each other's immediate co-presence. It was shown how the video-mediated environment rendered visible affordances for solving the trouble related to sharing the materials (e.g., the use of the chat interface for distributing participants' phone numbers), but it also made relevant some of its restrictions (see also Balaman & Pekarek Doehler, 2021). For instance, differing perspectives on the situation that stem from the use of different devices could be seen as problematic at times, since it made the interpretation of accountable actions,

such as being in a "writing position" during silences, difficult (see Extract 1). Another practical challenge was presented by the differing sequential orders that the use of multiple communication channels made relevant (see also Oittinen, 2023b; Gibson, 2014). Combining the spoken interaction with the writing in both the chat interface and WhatsApp required careful coordination of verbal, embodied and screen-based conduct. A shift in orientation between the modalities was accomplished bodily but also through explicit verbalizations of own actions and visibility checks (see Extracts 1, 2 and 4). However, there was still misalignment in the way in which the problem-solving sequence was perceived by the participants (e.g., between Tomi and the two learners), and reaching agreement on how and when to use WhatsApp as part of solving the problem was less straightforward. This can partly be explained by the timing of the course: in 2021, the participants, including the course instructor, had no prior experience of using the video platform Zoom.

The study complements earlier findings on video-mediated interaction (e.g., Oittinen, 2023; Pekarek Doehler & Balaman, 2022) by giving an insight into a setting that has not been studied before (i.e., adult professional training). It also provides knowledge of the situated resources and practices of participants who can be considered novice users of the given technologies. Furthermore, the research develops the notion of practical accord (Mlynář, 2021) deploying it in the analysis video-mediated interaction. These settings pose practical challenges for participants who cannot all access (i.e., modify and see) the learning materials at the same time or monitor each other's full embodied conduct. This makes it difficult to interpret the form and timing of social actions around and with material objects (cf., Greer & Leyland, 2020) and to flag and solve troubles related to practical accord also in more implicit ways (e.g., via utilizing gaze and body movement). The study showed participants' creative ways to accomplish practical accord and presented it as a cross-modal process in which their jointly coordinated conduct in diverse channels of communication had a key role.

The study has implications for future research in that it can help pave the way for more research on the use of multiple channels of communication in video-mediated interaction. More research is still called for particularly on settings where affordances of spoken and written interaction intertwine. The findings of the research can be used to inform future educational practice, as they can help come up with solutions for online learning and teaching that enable equal possibilities for learners to participate and engage in discussion utilizing various communication channels. The results can also be used to develop guidelines for teachers and institutions across educational spheres. They can also be used as part of communications training targeted at professionals in different fields, both within and outside the crisis management context.

Acknowledgments

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