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Social Interaction

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Managing participation and turn-taking in children's digital activities: touch in blocking a peer's hand

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Abstract

This article investigates touch in the social organization of digital classroom activities as small groups of primary school pupils animate a story by using a shared iPad. Such a socio-material setting foregrounds haptic resources for action and requires coordination of hand movements on and around the screen. The groups in our data treat the animation as a product that takes its shape through the individual members operating the device one at a time. Our analysis focuses on how the haptic practice of blocking a peer's hand is deployed to manage competition for a turn at using the tablet and to resolve the problem of its simultaneous manual operation by two or more participants. The blocks we describe are non-intensive human-to-human touches with varying duration whereby one participant prevents another from accessing the screen by sweeping the latter's hand aside or grabbing and holding it. We show through a multimodal analysis how blocks accomplish the social action of claiming a turn for the blocker by investigating how they emerge sequentially, how participants operating the tablet anticipate peer interruption with ready-to-block hand movements, and how blocks are complied with or resisted.

In our conclusion, we consider to what extent the young children in our data treat blocks as morally problematic and socially controlling actions, and how digital technologies shape educational practices.

Keywords: classroom interaction, touch, digital tablets, turn-taking

1. Introduction

A prominent line of inquiry in the recent EMCA literature on touch in human interaction has explored how touching is a part of socialization practices. These studies have shown that touch is a routinely used resource for parents and educational professionals to control, correct, or otherwise guide the embodied conduct of children (e.g., Burdelski, 2010; Cekaite, 2015, 2016; Kern, 2018; McIlvenny, 2009). However, the ways in which participants haptically negotiate social control can be quite different in children's peer interactions. In peer interaction, social control is often tangled up with issues of competition, teasing, or playfulness (e.g., Niemi, 2016). So far, investigations of how children or adolescents themselves deploy touch for controlling, guiding, or directing co-participants and their attention in educational contexts have been scarce (see however Karvonen, Heinonen, & Tainio, 2018; Kääntä & Piirainen-Marsh, 2013). In this article, we contribute to the growing body of literature on human-to-human touch by exploring the role of touch as a way to regulate a turn-taking system "organized not through speech but through bodily actions" (Ivarsson & Greiffenhagen, 2015, p. 406). More specifically, we investigate how primary school pupils negotiate the usership of a shared digital tablet in part by blocking their co-participant's hand during an educational group activity. This way, we also aim to expand the emerging literature on the interactional organization of educational activities involving mobile digital devices (e.g., Hellermann, Thorne, & Fodor, 2017; Hermansson, 2017; Juvonen, Tanner, Olin-Scheller, Tainio, & Slotte, 2019; Rusk, 2019; Theobald et al., 2016).

As Liberman (2019) points out, "much orderliness in local affairs requires the coordination of joint activity by means of taking turns" (p. 92). Although in EMCA research the concept of turn-taking has been developed most extensively in relation to talk, following the work by Sacks, Schegloff, and Jefferson (1974), there are also social activities in which turn-taking is not completely, or even principally, a matter of talk. Thus, when skateboarders manage who is to enter a skating pool next (Ivarsson & Greiffenhagen, 2015) or motorists negotiate when to enter an intersection

(Lieberman, 2019), they do so by embodied means, in virtual absence of talk. Yet other kinds of activities are organized through the parallel and at times intersecting turn-taking systems of talk and some bodily action, such as when groups of people use a shared digital device. In the focal activity of this study, one aspect of the local order in young children's participation is how they manage their haptic access to the shared iPad through taking turns at handling it. Their orientation to such object-related turn-taking as a relevant organizational layer of the ongoing collaborative activity is visible inasmuch as typically only one participant operates the device at a time and overlapping use tends to end quickly.¹ Moreover, from a technological perspective, most application-based actions can only be done by touching the screen one at a time (e.g., to select an item in the menu). As far as we are aware, the only simultaneous manual operation possible is 'dragging' two or more animation characters across the screen at the same time.

We thus describe a setting where turn-taking concerns both talk and embodied conduct. In contrast to pool skating where a turn requires the deployment of the whole body (Ivarsson & Greiffenhagen, 2015), taking a turn to operate a shared digital tablet involves starkly different physical dimensions of embodied action: Tablet use requires millimetrical precision of finger movement. Furthermore, in an activity environment characterized by competition for participation, such manual actions need to be rapidly executed and coordinated with other participants' hand movements. Finally, in our context, operating the tablet is less of an individual endeavor than a skating run in the pool because the 'product' of the group tablet activity (cartoon animation) is a collaborative achievement. This means that whatever one person does with the application has consequences for the whole group's shared end result.

Our analysis examines how participants who are currently using the tablet attempt to sustain their ongoing turn at handling the device by blocking their peer's hand as it is observably approaching the tablet. We will show how such blocks constitute or are part of multimodal directives (e.g., Goodwin & Cekaite, 2013) for prospective users to not interrupt the ongoing user's turn at handling the device and to pull back their hand from the screen. As the analysis demonstrates, such blocks are non-intensive human-to-human touches that minimally involve one participant positioning their hand between the tablet and the hand of another participant that is visibly moving towards the screen. The blocks can be short and punctual (block + sweep aside) or durative (block that develops into holding). We argue that blocking

constitutes a practice for negotiating the inherently moral question of when one turn at handling the shared device should end and another begin, a practice that displays and indexes the competitive nature of participation in peer groups involving young children. Our analysis also suggests that participants are attentive to how their co-participants position and move their hands in the vicinity of the tablet screen, and that they can ascribe tablet-relevant actions to such movement trajectories.

2. Data and methodology

Our data are video-recorded interactions in which seven groups of two to three Finnish third grade pupils, aged 9-10 years, use an iPad application called Puppet Pals to design and record a cartoon animation based on a story script that they have previously written on paper. The activity was part of the students' language arts and literature lessons, and the group recordings were 36-39 minutes long. Each peer group had one device during the activity. They worked close to each other, inside or outside the classroom, with the device either at a desk or on the floor. Most of the time, the teacher was not part of the group interactions but instead made rounds to advise and assist the groups in their task. The students had used the application earlier and were familiar with its functions and selection menus as well as general principles of operating iPads.

Based on these data, we created a collection of 42 instances in which one participant prevented another participant from operating the device by employing touch to block, grab, or move the other participant's hand away from the screen. In what follows, we report on our observations of this collection by discussing four typical examples. The transcription of embodied conduct follows Mondada's (2014) conventions, including symbols denoting the preparation (.) and retraction (,) of an embodied action as well as "LH" and "RH" to distinguish between actions accomplished with the left and right hand when both are doing something. Verbal turns that contain students' first language (Finnish) are translated into English. All names are pseudonyms.

3. The interactional organization of blocking

Many of the blocks in our collection occur in sequential environments in which participants are proposing and selecting animation features such as its background

location, music, and story characters. As will be shown, sometimes blocks co-occur with verbal directives and exclamations such as “Wait” (*Oota*), “Don't” (*Älä*) or “No” (*Ei*), which are part of the social action of dismissing interruption. At other times, blockers might accompany a blocking move with proposals, typically prefaced with the particle ‘no but’ (*eiku*) (see Haakana & Visapää, 2014), which provide an account of what the blocker is about to do with the device. However, blocks can also occur without any talk that would explicate the social action being done through it. In what follows, we first analyze differences in the duration and embodied characteristics of blocks (section 3.1) and then discuss how participants preparing to block treat interruption by the other participant as a projected action (section 3.2). Finally, in section 3.3 we will examine how the blocked participants respond to blocking: Even though in our data participants typically comply with the social action being done through blocking (i.e., a claim to continue handling the device by dismissing possible interruption), participants may also resist blocking. All in all, these sections show some ways in which the moral nature of using a shared digital device is indexed in participants’ situated conduct before, during, and immediately after blocking, which we will elaborate in the conclusion.

3.1. EMBODIED CHARACTERISTICS OF BLOCKS

The first extract showcases three punctual blocking moves aimed at two different participants. Here, Asko, Simo, and Anna are selecting characters for their animation when competition for who gets to operate the tablet emerges. Simo, who is currently holding the tablet, announces and selects a character from the selection menu (line 1), while Anna, who has not yet chosen a character, claims the next turn to select one and operate the device for herself (line 2). However, Simo proceeds to select music (line 4) instead of letting others select ‘their’ characters. In what follows, he blocks and sweeps aside Asko and Anna’s hands as they approach the tablet screen in lines 4 and 7.

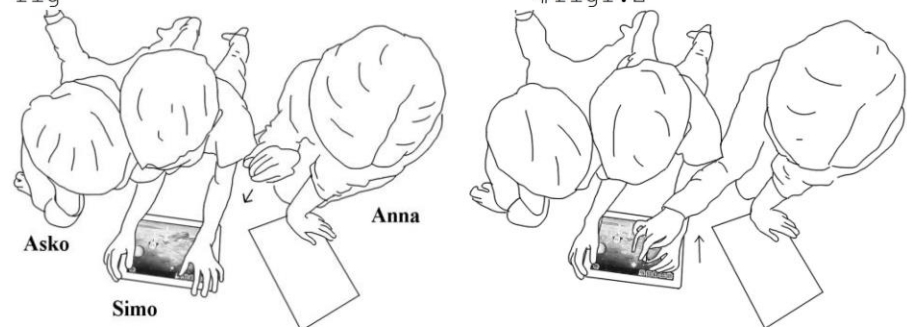
Extract 1. Blocking a prospective user’s hand

01 SIM m(h)ää laitan f<↓tämä>f
'I'll put this one'
simRH fselects characterf

02 ANN eiku m[↑mää laitan] sev ↓vi<ka&n>=#
'no but I'll put the last one'

03 ? [()]
simLH mtouches music iconm
ann &.....->
fig #fig1.1

04 SIM =mmikä m&tämä o#
'what's this'
simLH mopens music menu# mblocks and sweeps up anna's hand-->
ann&hand twd screen-->
fig #fig1.2






#1.1 #1.2

05 (0.2)m&(0.5)&(0.2)m = (0.9)
simLH -->m,,,,,,,,,,,,m
ann ---->&,,,,,&

06 ASK #[(vielä) %musii%kki%a]
'music still'

07 SIM #[joo::, %(0.3)% jo-] #joo& &laite&ta-& (.) #h&mh
'yeah (0.3) ye- yeah let's put- hmh'
ask %.....%thumb twd rec icon%
simRH fblocks asko's handf
simLH mblocks anna's handm
ann &.....&hand twd screen&,,,>>
fig #fig1.3 #fig1.4 #fig1.5

#1.3 #1.4 #1.5

The first blocking move occurs as Anna's hand approaches the screen from above during line 4. Simo, who has just opened the music menu, lifts his arm to block and sweep Anna's hand away before it touches the screen (figure 1.2). Simo's verbal turn at line 4 (*mikä tämä o*, 'what's this') is not part of the action of dismissing interruption but rather a 'noticing' (Schegloff, 2007, pp. 87, 219) of a music icon on the screen. In response to Simo's blocking, Anna withdraws her hand during the silence at line 5 but

maintains her hand in mid-air above the screen (visible in figure 1.3) in a position where she is ready to approach the screen again.

Asko's utterance at line 6 (*vielä musiikkia*, 'music still') is hearable as a proposal to select music and thereby suggests alignment with what Simo is doing, but he simultaneously also moves his thumb towards the record button. This is when the second blocking move takes place, as Simo prevents Asko's incoming hand from touching the screen and sweeps it upwards (figure 1.4) in the same manner as Anna's hand earlier. Asko withdraws his hand and places it to the side of the device (visible in figure 1.5).

The third block occurs when, in close succession, Anna's hand approaches the screen and Simo once again obstructs her from operating the device by lifting both of his hands upwards (figure 1.5). Both the second and the third block co-occur with verbal tokens (line 7: *joo*, 'yeah'), which seem to acknowledge Anna and Asko's right to use the tablet. However, the way Simo manually handles the device conveys that his turn at using it should still continue. This way, the blocks constitute moral actions that regulate participants' entitlement to implement or even decide what to do next with the shared device.

Extract 1 demonstrated the key role of touch in the interactional organization of the activity of using a shared digital tablet in a peer group consisting of young children. The children in our data not only operate the device by touching it but also recurrently and routinely touch each other during such activities, both by leaning against each other and in connection with moving their hands to operate the device. These hand movements on and around the screen are a part of the social organization of the activity in that they constitute, and are oriented to as, attempts to claim, sustain, compete for, or obstruct another's turn at using the tablet. The three instances of blocking in extract 1 exemplify touches which are minimal both in intensity and duration. As in most cases in our collection, the blocked participants comply with the social action that the block accomplishes (dismissal of interruption) by withdrawing their hand from the screen immediately after they have been blocked. However, the compliance is often momentary in nature in that the hand may be placed in a position that allows readiness to attempt to claim a new turn (e.g., Anna in figure 1.3).

Blocks can also be more durative. This is the case when the blocking movement develops into grabbing and holding another participant's hand, often by the wrist, such as in extract 2. Just prior to the beginning of the extract, the children have had a

disagreement concerning who gets to open the application. Vappu has opened it without much consultation, and then, with the application running, proceeded to the location menu. Here, she continues to operate the device on her own by selecting a background during Maija's proposal (line 1) and by opening the music menu (line 4). When Maija moves her hand towards the screen, Vappu blocks and grabs her hand for an extended period of time (beginning from line 6).

Extract 2. Grabbing and holding a hand

01 MAI %>kokei(1e) laittaa<¤ äänet% pois
'try to put the sound off'
sam ¤adjusts volume-->
vapRH %selects animation background%

02 VAP hmh (0.3) no †mitä se hait%taa
'hmh (0.3) well what does it matter'
vapRH %.....->

03 (0.6)¤
sam -->¤

04 VAP % (ne-/me-) ei oo meri%rosvoo <°vaan, °>
'(they-) there's no pirate but,'
vapRH ..%opens music menu%.....->

05 (0.2)%(0.1) % (0.3)* (0.2) #%(0.1) %* = (0.9)
vapRH%selects music w thumb% %selects music w thumb%
mai *.....*hand twd screen->
fig #fig2.1

06 VAP †la^ita# vähä* ^menemmän?# ¤° (>oota vähä<°)
'put a bit more? (wait a bit)'
vapLH ^blocks-----^lifts maija's hand up and holds it>>
mai -->*
sam ¤selects music¤
fig #fig2.2 #fig2.3



07 (0.2)¤(0.3)
sam ¤.....->

08 VAP ¤ei %sitäh
'not that one'
vapRH %.....->
sam ¤adjusts volume->

09 (1.0)%(0.1) %¤(4.1) = (5.2)
vapRH%selects music%
sam -->¤

Maija's suggestion to mute the sound (line 1: *kokeile laittaa äänet pois*, 'try to put the sound off') is oriented to by both Sami, who begins to toggle the volume buttons at the side of the tablet, and Vappu, whose verbal response (line 2: 'well does it matter') is less than enthusiastic towards the suggestion. At line 4, Vappu opens the music selection menu and indicates both verbally and by moving her right hand above the screen that she is looking for a particular option in the menu.² During the 0.9 second silence (line 5), she appears to touch a particular music option two times with her right-hand thumb. This is when Maija begins to move her hand towards the screen (figure 2.1) and Vappu blocks Maija's hand. Vappu does this by lifting her own left hand upwards (figure 2.2) and by wrapping her fingers around Maija's wrist and lifting it well above the screen (figure 2.3). In this position, Vappu sustains the hold beyond the end of the transcript. Although the maneuver leaves Vappu's right hand free to continue operating the device, it creates room for the third member, Sami, to join in. Indeed, Sami seizes the opportunity and quickly selects a piece of music (visible in figure 2.3).

Vappu's grab and hold of Maija's wrist co-occurs with two verbal directives (line 6). The first one (*laita vähä enemmän*, 'put a bit more') seems to be addressed to Sami, who has just been adjusting the volume and who subsequently begins to toggle the volume controls on the side of the device (lines 7-9). However, it is not entirely clear whether the second directive to 'wait a bit' is addressed to Maija or Sami. It could be sanctioning Maija for her attempt to manipulate the device and simultaneously provide an account for why Vappu is holding her hand. Alternatively, it could be a way to reproach Sami for interrupting Vappu's ongoing turn at the device in order to make such an opportunistic music selection. In any case, the latter directive makes visible the moral nature of the organization of haptic participation in that it treats the operation of the device by the other(s) as inappropriate at that moment. Note that as Sami is still toggling the volume, Vappu makes her discontent with Sami's choice of music clear (line 8: *ei sitäh*, 'not that one') and selects another background music.

Similar to extract 1, in extract 2 the blocker uses one hand to prevent another participant's access to the tablet and the other hand to continue his or her use of the tablet. However, in contrast, here the block develops into an extended hold, which is a joint accomplishment in that at no point does Maija appear to try to break free from the hold, nor does Vappu seem to apply significant force to hold Maija's wrist still. These features make the touch somewhat ambivalent in terms of affectivity and control. On the one hand, an extended hold restricts its recipient's haptic participation

longer than the sweeping blocks in extract 1. On the other hand, such durative restriction is jointly accomplished since by letting her hand be held in such a way, the recipient of the hold also agrees with the roles, rights, and responsibilities in manipulating the device that her holder claims. Thus, the extended hold allows both participants to display an intimate and affiliative stance. In this sense, the touch in extract 2 can be seen as having multiple purposes (see also Bergnehr & Cekaite, 2018).

3.2 PROJECTING INTERRUPTION BY PREPARING TO BLOCK

Being able to block an incoming hand requires manual dexterity to 'hit' a moving target as well as monitoring and anticipating hand movements around the screen. Extract 3 shows a case of how anticipation of interruption of an ongoing turn at using the tablet is indexed by the way a current device user positions his hand as a 'shield' between the device and his peer's hand, thereby showing readiness to block an incoming hand. In this extract, Sini, Tuuli, and Mikko have just finished watching a first version of their recorded animation. When Tuuli and Sini discuss how to redesign it, Mikko suggests a new background and begins to operate the tablet. Mikko uses the tablet with his right hand from line 6 onwards, but he simultaneously orients to Tuuli's hand movements by preparing to block her with his left hand.

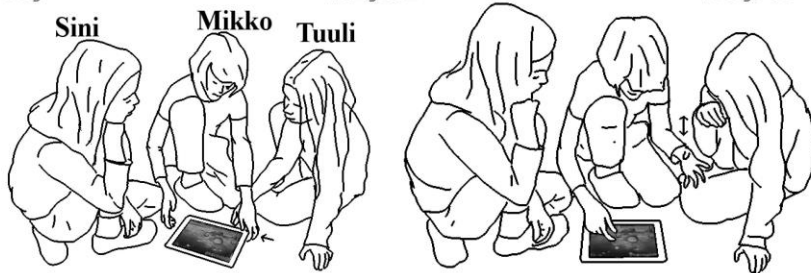
Extract 3. Anticipating interruption by preparing to block

```

01 TUU nonii tehää <uus>=
      'okay let's make a new one'
02 SIN =jos tehtäs uudella taustalla,=
      'if we'd make one with a new background'
03 TUU $=e:[::i,      ]
      'no::'
04 SIN [(niinku) samo]illa tyypeillä koska, (.)
      'like with the same characters because'
mik $moves closer to the tablet-->
05 ↑ei $tää $onnistu #[(tällä)$      ]
      'it doesn't work out (with this)'
06 MIK [↑Eiku $teh-]%(.) te-#+ %#ei-]
      'no but let's mak- (.) ma- no-'
07 TUU [no ( )      ]
      'well ( )'

tuu .....#wipes nose w rh->
mik -->$ $adjusts tablet----$
mikLH .....%lifts hand%lowers hand-->
mikRH .....+.....->
fig #fig3.1 #fig3.2

```



#3.1 #3.2

```

08 (0.2)%(0.3)
mikLH -->%
09 MIK #eiku,## (.) +ote↑taa +joku# muu% +taus+mta vaikka,##
      'no but (.) let's take some other background like for example-'
tuu -->#lowers hand-----# #taps mikko's hand#
mikLH %.....%moves hand twd tuuli-->
mikRH .....+opens menu+ #fig3.3 #fig3.4
fig #fig3.3 #fig3.4

```



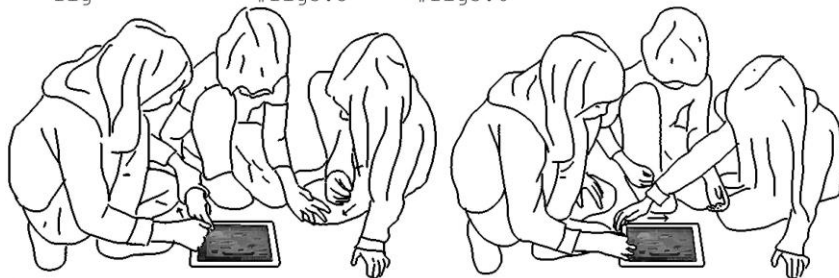
#3.3 #3.4

```

10 (0.4)
11 SIN no& [↑e&#ii+]ii
      'well nooo'
12 TUU [↑e&#ii+]i+&ii%##
      'noooo'

sin &....&grabs, removes mikko's RH&
tuu #extends arm#pulls tablet closer>>
mikRH +curls index finger+
mikLH -->%withdraws hand>>
fig #fig3.5 #fig3.6

```



#3.5 #3.6

As Tuuli and Sini are discussing how to redesign the animation (lines 1-5), Mikko edges closer to the tablet, straightens it so that he can view it upright (figure 3.1), and begins a turn (line 6) in overlap with Tuuli and Sini. In his turn, the turn-initial particle *eiku* ('no but') suggests that some kind of repair, correction, or counter-proposal could be underway (see Haakana & Visapää, 2014). While Mikko is talking, he begins to move his right hand towards the background location icon on the screen and eventually opens the menu; at the same time, Tuuli lifts her right hand upwards. Mikko's anticipation of interruption is visible in how he 'shadows' Tuuli's moving hand by lifting his own left hand in mid-air between Tuuli and the screen as he keeps operating the device (see figure 3.2). When Tuuli's action (wiping her nose) becomes recognizable, Mikko lowers his left hand (marked in the transcript as the retreat of his action). Thus, Mikko's orientation that Tuuli might be interrupting the very thing that he is proposing to do with the device serves as a method for entering the activity of redesigning the animation.

The 'shadowing' continues while Mikko, after multiple self-repairs, utters a proposal that the group use a new background at line 9 (*eiku, (.) otetaa joku muu tausta vaikka*, 'no but (.) let's use some other background for example'). Tuuli lowers her hand, and, equally so, Mikko lowers his left hand responsively so that it is roughly at the same level vertically as Tuuli's hand (figure 3.3). Mikko also moves his hand closer to Tuuli's hand so that towards the end of line 9, their hands lightly touch each other (figure 3.4). Throughout this maneuver, Mikko continues to operate the tablet with his right hand: He opens the location menu and hovers his outstretched index finger above a particular option (an igloo). This also means that even though Mikko's verbal turn might treat his action as a proposal, his haptic conduct indicates a selection of the background without much negotiation. The emphatic and very tactile dismissals of Mikko's verbally still incomplete 'proposal' by the two girls (lines 11-12) seem to attend to such contradiction: Sini blocks Mikko's hand, grabs him by the wrist, and lifts his hand away from the screen (figure 3.5), and Tuuli reaches for the tablet (figure 3.6) to turn it towards herself. These dismissals treat Mikko's selection as problematic and terminate his turn at using the tablet immediately; moreover, their swift design also orients to the temporal projection that Mikko's 'hovering' finger indicates for the selection.

In extract 3, Mikko's readiness to block displays an orientation to the morally problematic nature of his tablet operation: that it is something he should not be doing

in that way, at that moment. It is a readiness visible in his left hand's movement trajectory and posture. An open palm and outstretched fingers constitute a hand posture that is ready for manual action and can thus quickly 'shield' the screen and block a hand approaching the tablet. As figures 3.2-3.5 show, such a hand is observably not at rest, unlike Mikko's left hand after he has been physically removed from the device (visible in figure 3.6).

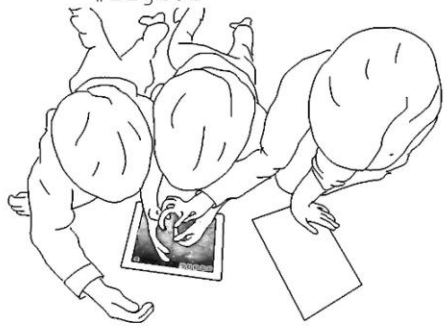
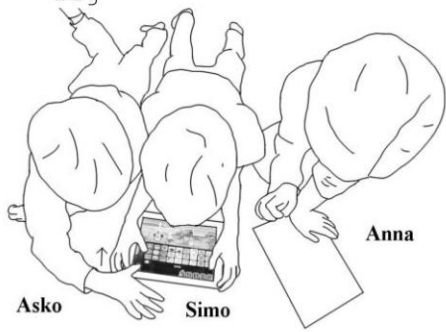
3.3 RESISTING BLOCKING

As extracts 1-3 have shown, participants who are being blocked mostly comply with the blocking action and the way it controls the turn-based organization of operating the tablet. Compliance is signaled by withdrawing the blocked hand further from the screen. Sometimes the blocked hand may be left nearby in mid-air as if to wait for the next opportunity to use the tablet (as in extract 1). At other times, the blocked persons might continue to participate verbally (such as in extract 2) in the activity and perhaps operate the tablet manually at some later stage.

However, one way to resist a block is not to withdraw one's hand as it is being touched but instead to make a countermove against the hand of the blocker. This is demonstrated in extract 4, which shows how the events of extract 1 continue. As was noted earlier, Simo, who had been using the tablet in a fairly individualistic manner, blocked and swept both Asko and Anna's hands away from the tablet at line 7 – the latter child's for the second time within a spate of seconds. However, at line 8, Anna resists the block by pushing against Simo's hand and succeeds in claiming a turn at using the tablet this way.

Extract 4 (continuation of extract 1). Countering a blocking hand by pushing it aside

06 ASK [(vielä) %musii%kkif%a]
 'music still'
 07 SIM [joo::, %(0.3)% jo-] #joo£ &laite£ta-& (.) #h&mh£=
 'yeah (0.3) ye- yeah let's put- hmh'
 ask %.....%thumb on rec icon%
 simRH £blocks asko's hand£
 simLH £blocks anna's hand----£
 ann &.....&hand twd screen&,,, ->
 fig #fig4.1 #fig4.2



#4.1 #4.2
 08 ANN =no-&£ (.) #ä#£lä-& #↑ei ↑vi&elä#££
 'well- (.) don't- not yet'
 ann ,,,,&rh twd screen--&pushes s's lh&
 simRH £rh twd music icon£,,,,,,,,,,,,,£
 simLH £blocks anna£,,,,,,,,,,,,,£
 fig #fig4.3 #fig4.4 #fig4.5



When Anna retracts her right hand after Simo's block at the end of line 7, she immediately urges Simo to stop his ongoing action (line 8: *no älä*, 'well don't') and re-approaches the screen with her hand from the side of the tablet. Simultaneously, Simo moves his right hand towards the music icon, thereby aligning with Asko's proposal at line 6, and again blocks Anna with his left hand (see figure 4.3). However, instead of withdrawing her hand at the touch of hands as in earlier occasions, Anna pushes against Simo's hand with greater force (figure 4.4). As a result, Simo withdraws both hands from the screen and rests his chin on them (figure 4.5). His hands are thereby in a position that does not project immediate manual operation of the tablet.

As extract 4 shows, a block can also be met with resistance. Anna's third and successful attempt at using the tablet consists of such an embodied demonstration of refusing to 'back down' and a verbal complaint that identifies Simo's conduct in the

situation as morally problematic (line 8). This is different from a mere announcement of what one is about to do (as Anna did on her first attempt to operate the tablet at line 2 in extract 1) or an attempt at using the device without any verbal account (Anna's second attempt, line 7 in this extract). Line 8 thus seems to add an affective layer to the manual force that Anna demonstrates in her third attempt to access the device. The cut-off turn-initial particle *no* ['well'] (see Vepsäläinen, 2019) and the high-pitch delivery of the request to suspend music selection (*älä- ei vielä*, 'don't - not yet') convey a sense of frustration, urgency and even desperation with the fact that Simo seems to be extending his turn at using the tablet. Through the deployment of these resources, Anna constructs a more decisive attempt to use the device, conveys to Simo the moral implications of his having made one block too many, and is finally able to secure a turn.

4. Discussion

In this article, we have described how 9 to 10-year-old Finnish-speaking children use touch (and talk) to negotiate whose turn it is to operate a shared digital device by preparing and executing haptic blocking actions as well as by responding to such actions. The analyses have shown how blocks constitute – either on their own or together with verbal turn-constructive elements – directives to not interrupt ongoing tablet use. Insofar as blocks respond to another participant's embodied or verbal attempt or even request to use the device, they can also be seen as second-pair partial refusals of such requests.

Blocks exemplify how participants' haptic conduct involves sense-making practices that are embedded in an ecology of action afforded by the physical dimensions of the portable digital device. When huddled around the device, participants' hands are close to the device and each other's hands. These parts of the body are an instrument for not only operating the device but also for managing the very organization of the cooperative activity. Participants can thus see and make sense of each other's hand postures and hand movements, and analyze them for the action the hands are doing or project what they are about to do. This allows the current user of the digital device to see an 'incoming' finger as a pre-beginning signal for using the device, in a manner similar to how pointing in situations with a sustained focus of attention on shared artefacts can project a self-selected turn-at-talk (Mondada, 2007).

Similarly, an open hand placed in mid-air at the side of the screen can be taken as a sign of preparedness to operate the device (extracts 1, 3), unlike, for example, a hand on which a participant is resting their chin (extract 4), which is not visibly 'in play'.

By being a practice for controlling when one party's turn at handling the device should end and another one's should begin, blocks foreground the moral nature of sharing one device between multiple participants. In this sense, it is interesting that, by and large, the participants in our data treat blocks as an unproblematic part of the activity that is in line with its game-like, intensive, and at times competitive nature: Blocks rarely escalate into disputes or involve manual force (but see extract 4). On the other hand, blocks can co-occur and be received with verbal directives and expressions of frustration that orient to 'friction' in turn transition and treat one party's conduct as inappropriate. It is possible that the exact moral underpinnings of blocking actions are different depending on the age of the participants and the type of the digital device activity. Our findings on managing device usership in interaction between young children can be contrasted with those by Thorne et al. (2015), who described how adult participants, who were collaborating on an outdoor group task, coordinated whose turn it was to operate a shared mobile phone through explicit requests for the device, such as by saying 'let me see.' Blocking, grabbing, and pushing the other participant's hand away are quite different practices for achieving a transition in usership, and it seems likely that such practices might have more serious social implications and repercussions in interaction between adults than what we see in our data. These practices and their moral treatment may thus be characteristic of children's peer interaction and their life worlds.

Other dimensions that play a role in the local acceptability of hand blocks include the force and type of the resulting touch as well as participants' entitlement to conduct the device-relevant action that a block regulates. Thus, by blocking too many attempts in a row to access the tablet or blocking too 'bluntly,' a participant risks coming across as someone who claims too much ownership over the shared tablet (extracts 1 and 4 showing a case in point). As a manual practice, blocking can be achieved through different kinds of touches, of which some may be seen as more affiliative in nature (e.g., extract 2) than others. The intensity of the touch is an interactional achievement in that it can be defused and increased by either party by withdrawing a hand or by pushing harder.

Besides such embodied design features of blocks, our findings point to entitlement to use the device as something that underpins how acceptable participants treat blocking actions. When making selections in the application menus, participants in our data treated some things as a matter of individual selection and others as negotiated by the group. Thus, a block that prevents a participant from accessing the screen to select their 'own' character (extract 4) can be treated as being more off-limits than one that is part of the ebb and flow of collaborative group decision-making.

In this article, we have investigated the practice of blocking in the context of a digital educational activity. The animation application can be seen to diversify ways of participating and learning in educational activities in the classroom by constituting a learning environment where touch emerges as both a significant resource and an organizational domain alongside talk as students cooperate on a task. Blocking as a practice is not limited to the specific technological setting, but it seems more salient in this context than more traditional pen-and-paper group activities. In this regard, it is interesting that blocks did not seem to occur in moments when these same groups were writing their story scripts on paper, typically such that one person was a designated scribe (data not analyzed here). In fact, there was significantly less if any competition at all for who got to use the pen. Besides this kind of trend, there were also differences in whether the peer groups in our data accomplished the selections on the tablet application in the somewhat competitive haptic manner that we have described in this article or through predominantly verbal negotiation. Therefore, the speed and dexterity with which these children compete for usership of the application in the extracts of this article are perhaps indices of their engagement with the digital activity instead of a sign of non-affiliative disagreement and social control.

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¹ Cf. the "grossly apparent facts" in conversation (Sacks, Schegloff, & Jefferson, 1974, pp. 700-701) and in pool skating (Ivarsson & Greiffenhagen, 2015, pp. 412-415).

² It is possible that the cut-off word at the beginning of line 4 could be either *me*, 'we', or the beginning of the word *merirosvo*, 'pirate', which Vappu uses later in the turn.