

Social Interaction. Video-Based Studies of Human Sociality.  
2024 Vol. 7, Issue 4  
ISBN: 2446-3620  
DOI: 10.7146/si.v7i4.144223

# ***Social Interaction***

## ***Video-Based Studies of Human Sociality***

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### **Adapting to an Unconventional Use of a Chat Environment in Workplace Training: The Case of Digital Navigation**

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#### **Abstract**

This article investigates how participants in a face-to-face workshop adapt to an unconventional way of using a digital chat tool. The chat, which is projected on a screen for everyone to see, is not used as an interactional tool but rather as an archive for photographs the participants have taken for a workshop task. Thus, to discuss the photographs, the facilitator using the computer needs to navigate in the digital space with the help of the photographer in order to find each photograph. Drawing on multimodal conversation analysis and the concept of affordance, we show how the participants, during the course of the workshop, adapt to the task-relevant affordances and learn to conduct the navigation process in an increasingly collaborative fashion.

*Keywords:* digital navigation, adaptation, affordances, workshop, multimodal conversation analysis

## 1. Introduction

Various kinds of digital tools are an integral part of workplace practices in the 21st century. While these technological tools are often used for human-computer interaction or interaction between remote participants, they are also often utilized during face-to-face interaction. The use of these tools inevitably shapes interaction, creating *affordances* (Hutchby 2001; Meredith 2017) that enable as well as constrain the ongoing activity. However, as previous studies have pointed out, the use of technological tools may, in real-life interactional contexts, diverge from their intended functions (e.g. Boudreau & Robey, 2005; Vyas et al., 2017; Salomaa & Lehtinen, 2023b; Olbertz-Siitonen & Piirainen-Marsh 2021). Our study contributes to this discussion by examining an example of the situated use of digital technologies in the workplace context. In the case at hand, a technological tool, a chat environment on a digital platform, is used in an unconventional way, as an archive for photographs, in a face-to-face workshop. Chats are usually used as part of different platforms and applications for interacting remotely with co-participants, and most workshop participants likely have a lot of experience of such chat use, both in their everyday life and in the workplace. In the task at hand, however, they are unable to rely on their prior knowledge of the operating principles of a chat (see Meredith 2017 on “the traditional” affordances in chat interaction). Hence, they have to adapt to a different use of chat, in a face-to-face context where the interactional affordances are not relevant.

The data were drawn from a management workshop for leaders of Finnish public organizations. The workshop was led by a professional art photographer who had developed a training method that utilizes photographs as training and learning material. She instructed the workshop participants to take a photograph with their smartphones. The resulting photographs were then uploaded in the chat. Before the group was able to jointly inspect and reflect on these photographs, they needed to be identified one by one in the chat. This is the phase of interest in this study. Using video-recordings from the workshop and drawing on *multimodal conversation analysis* (see for example Deppermann 2013), we analyze sequences where the photographic artist *navigates* towards one photograph at a time in the chat environment (for on-screen navigation, see Olbertz-Siitonen & Piirainen-Marsh 2021). This is done in close co-operation with the participant who has taken the photograph. Importantly, neither participant can carry out the navigation task alone: the artist is the only person able to take actions in the chat during the navigation, as the chat is projected on a screen from her laptop, while only the photographer knows which is the correct photograph and its location on the platform.

Navigation is accomplished with the help of what we have called *navigation cues*, such as the location of the chat post to which the photograph is attached, the name of the person who has uploaded the photograph, and the topic of the photograph. These cues are contingent on specific affordances of the chat, e.g.,

the top-down ordering of chat posts based on the point of time when the post was published, the chat poster's name, which appears above the post where the photograph is uploaded, and the visibility of the pictures uploaded in the chat. We aim to answer the following research questions: 1) How do the participants orient to the features afforded by the chat? 2) What kinds of navigation cues do they draw on during the navigation sequence? 3) How does their co-operation evolve during the workshop?

The study points out that co-operation between the participants deepens in the course of the workshop. In the beginning of the workshop, the artist supports the navigation activity in different ways. In the latter part of the workshop, the participants begin to orient towards joint responsibility for finding the correct photograph. Furthermore, we demonstrate that changes take place concerning the usage of affordances and navigation cues in different phases of the workshop.

Many earlier studies have focused on changes in activities in the workplace in different kinds of employee orientation and training contexts (see, e.g., Arminen, Koskela, Palukka 2014; Melander & Sahlström 2009; Svensson, Luff & Heath 2009). Our study differs from these studies as, instead of concentrating on teaching and practicing new skills, our interest is in adaptation during an activity (on work-related adaptation, see also Heinonen, Niemi & Kaski 2021; Nielsen 2012). This approach enables us to generate new knowledge on how, by adapting their actions and finding new solutions, users of technology at work are able to carry out their tasks in more effective ways.

## **2. Orienting to the Affordances of Digital Tools in Interaction**

The concept of affordance has been used extensively in the study of technology-mediated interaction (e.g. Hutchby, 2001; Meredith, 2017). Originally, however, the concept, as coined by Gibson (2014 [1979]), had a wider use. For Gibson, affordance meant the possibilities and constraints that any feature of the environment offers an animal. For example, a flat surface affords standing or walking in an upright position, whereas a vertical surface constrains movement and affords falling down. In similar vein, different features of technologies offer possibilities for certain actions while at the same time constraining others. For example, a "like" button in a chat affords responding to a post in one (rather restricted) way.

In conversation analytic research on technology-mediated interaction, the concept of affordance has been used to make sense of the impact of technology on interactional practices. Meredith (2017) sees affordances as a lens through which to explore how the participants of interaction themselves orient to the features of a specific technology. For Meredith, the focus is not on what kinds

of actions the features of the technology enable, but how the participants use these features in their actual activities.

As can be seen from recent reviews (Meredith, 2019; Koivisto et al., 2023), earlier conversation analytic research has mainly focused on interaction on single platforms or applications, such as WhatsApp, Twitter or Teams, often comparing the interaction on these platforms to face-to-face interaction. However, as noted by both Meredith (2019) and Koivisto et al. (2023), the use of technology is inextricably linked to other kinds of interaction, for example face-to-face or video-mediated interaction. Technologies are always used in some context (see e.g. Reeves & Brown, 2016). This is also the case in our study where a mostly text-based platform that also affords uploading photographs and videos is used as part of face-to-face interaction. Such situations can be described as polymedial (Koivisto et al., 2023) or multimedial (see e.g., Salomaa & Lehtinen, 2023a). When a platform meant first and foremost for remote asynchronous use is utilized as part of face-to-face or video-mediated interaction, the affordances of the face-to-face or video-mediated environment become potentially relevant. This means, for example, that the participants' access to the platform becomes important: it is highly relevant whether or not the platform is projected on a screen for the participants to see (see, e.g., Salomaa & Lehtinen, 2023b). In such circumstances, technological features of the platform may also be used in unconventional ways that have been unforeseen by the designers. Olbertz-Siitonen and Piirainen-Marsh (2021), for example, show how the mouse cursor can be used for virtual pointing. This is, of course, contingent on the participants seeing the movements of the mouse on the screen.

In the present case, the participants use Howspace chat. While chat was originally designed to enable interaction between remote participants (see e.g., Herring & Androutsopoulos, 2015, p. 129) research has shown that it can also be used in unconventional, non-interactive ways. This is especially likely when chat is intertwined with face-to-face or video-mediated interaction and projected on a screen. For example, Salomaa and Lehtinen (2023b) found that the chat function of Howspace can be used for note-taking in a workplace workshop. They showed how the facilitator of the workshop recorded the main points of the workshop discussion as chat entries. In their case, there was no interaction between the participants in the chat, but instead a series of entries by one participant. These entries were, however, a result of interaction in the physical workshop space.

### **3. Examining Adaptation and Adjustment During a Repeated Work Task**

In our study, a central aim is to capture adjustment of action during a work task. This need to adapt one's activities is connected to the unconventional use of the chat environment. The participants in the workshop jointly accomplish recurrent

navigation tasks and begin – sequence by sequence – to make use of the affordances of the chat in a more appropriate way.

So-called *longitudinal studies* of conversation analysis have a long history of describing changes and adjustment in interaction (for an overview, see Voutilainen & Savijärvi 2016; Deppermann & Pekarek Doehler, 2021). This research perspective focuses on data collections that typically include cases collected at different points in time. The aim is to describe how changes in recurrent sequences among the same participants reflect, for example, the progress of the skills and competences of some individuals as well as their capability to take part in some action. For example, Voutilainen, Peräkylä and Ruusuvoori (2011) studied how a patient began to handle his feelings in a more self-approving way during a course of recurrent therapy sessions. More recent longitudinal studies have also focused on adaptation that takes place in digital environments. Pekarek Doehler and Balaman (2021) explored longitudinal change in how one participant coordinated her screen-based activities with her talk in task-oriented video-mediated interactions that formed part of an L2 English teacher education program. The study focused on phases where the participant needed to alert her remote co-participants to her screen-based activity (e.g., *let me check*). The study found that her grammatical constructions as well as on-screen activities became increasingly routinized in different ways over time. For example, later in the data, the precise nature of the screen-based activity became less explicit and often remained unspecified.

Our study clearly differs from the studies conducted from a longitudinal research perspective since we focus on activities that take place in the course of a single workshop. However, the issues raised by longitudinal studies on adaptation in participants' competence and participation and on task routinization are also central in our study. We aim at finding out how workshop participants' practices in repeated tasks change over time.

A few studies, also conducted in workplace settings, have described adjustments in interaction that take place during a single encounter. The study by Heinonen et al. (2023) is especially interesting. The authors described adjustments in the activities of a prospective customer during a work-related task and via digital tools. By focusing on different parts of a service demonstration between a salesperson and a prospective customer, they were able to showcase how the customer's contributions evolved, mirroring his situated understanding of the digital tool, namely an item of software. The customer ended up commenting on the screen view and guiding the salesperson's actions on the shared screen as the logic of the software gradually opened up for him.

However, the above-mentioned study, in which the data originate from remote interaction, differs from ours in two important respects. First, although also using a screen, the participants in our study are located in the same visual space. Second, whereas Heinonen et al. (2023) were interested in the adaptation of a

single individual, a customer, our focus is on group-based adaptation. Thus, the participants have the possibility to adopt new ways of acting during a work task not only through taking part in an activity themselves but also through monitoring each other's activities.

In these respects, our study resembles that of Nielsen (2012), who analyzed how a workshop was organized in procedural steps by a facilitator. A particularly interesting phase in the workshop was the one where the participants began to go through colored cards on which they had written notes in an earlier phase of the workshop. Through repeated participation in this task, the group members began to notice what was expected of them: i.e. recognizing their own colored card and opening up their ideas on it. In Nielsen's (2012: 102) words, the participants become "members of a local community of practice and together develop shared repertoires of resources".

Although some earlier studies have focused on group-based adaptation during a work task, a clear research gap on this topic remains. Most of earlier studies on participants' workplace adaptation focus on different kinds of new employee orientation and training contexts (see, e.g. Arminen, Koskela, Palukka 2014; Koskela & Palukka 2010; Melander & Sahlström 2009; Svensson, Luff & Heath 2009). These studies typically demonstrate how one or two participants practice and take over work-related skills guided by a supervisor. However, in addition to such workplace skills, employees frequently encounter many kinds of more ad hoc tasks that they need to adjust to in a situated way. Our study adds a new contribution in looking at such an ad hoc adaptation to work-related demands.

#### **4. Data and Method**

Our data derive from a workshop which was part of a broader management training course aimed at leaders from different Finnish public organizations. The course was provided by a training company specializing in the development of public administration. It also co-operated with other training providers, including a photographic artist who works as a creative entrepreneur, offering art-based development and training workshops for workplaces. For this course, the artist was subcontracted to deliver a workshop to approximately 20 course participants. To facilitate the workshop, the artist utilized a digital platform, Howspace, a comprehensive online system specifically developed for organizational use. In the workshop, the platform's chat function was employed for storing and sharing the trainees' photos, with all participants having access to uploading their photos. The workshop was observed and videotaped using two cameras. The material from the digital platform where all the photographs were uploaded was also collected. Apart from the photographic artist and the course participants, there was also another facilitator who participated in the workshop. She did not lead the discussion but acted as technical support.

The analytical process began as we started to go through the data in an unmotivated way. We found out that a large amount of time during this workshop was spent on doing an exercise given by the artist. In this exercise, the participants, using their smartphones, took photographs metaphorically representing good leadership which they then uploaded in the chat. Then, they gathered together and started to search for, go through and reflect on the photographs one by one. Since the participants took and uploaded the photographs mostly independently and in part outside the view of the camera, we did not want to focus on these phases. Instead, our interest was drawn to the phases in which the participants were seeking each photograph from the chat. It turned out that during these sequences the artist and the participant who had taken the photograph would need to find ways to co-operate.

We soon noticed that these navigation sequences – as we term them – were especially interesting from the perspective of changing practices and the development of routinization during a recurrent work task. The adaptation process became visible in the transformation of navigation cues as well as in other linguistic features and embodied actions reflecting the relevant affordances. We systematically collected all the navigation sequences, and they form a small collection of 17 cases. In the analysis, we utilize multimodal conversation analysis (Depperman 2013; Mondada, 2016), focusing on the sequential structure of the participants' activities and taking into consideration all the relevant modalities of action.

Before looking at the concrete extracts, we briefly describe the phases of a typical navigation sequence as well as point out the similarities in linguistic characteristics and embodied actions of the sequences in the collection. As we will show, verbal navigation cues as well as embodied activities in the chat environment (such as scrolling the chat view) play an essential role in the navigation process.

Overall, the participants rely on three different types of navigation cues in the data: the placement of the chat post to which the photograph is attached (*mä luulen et se oli pikkuse ylös* 'I suppose it was a little bit further up'), the combination of the forename and surname of the person who has uploaded the photograph, and the topic of the photograph ("a newspaper", "a coffee cup", "a group of chairs", etc.)

The very first turn in a navigation sequence is some kind of opening turn by the artist in which she implements an activity shift: *otetaa seuraava teijä ryhmästä* 'let's have a next person from your group'. When the participants have achieved the shared focus to find the next person's photograph, the next phase is to prompt and/or offer a navigation cue. The turn *onkoha alaspäi (.) vai ylöspäi* 'is it downwards (.) or upwards' is an example of a first-pair part of an adjacency pair where the artist prompts the photographer to present navigation-relevant information. *mä luulen et se oli pikkuse ylös* 'I suppose it was a little bit further up' is, correspondingly, a second-pair part in which the photographer offers a

navigation cue. *mul oli ne koivut siellä* ('I had the birches there') is an example of a first-position turn where the photographer offers a navigation cue independently, without a prompt from the artist.

There are altogether eight prompts from the artist. Three of these initiate the discussion concerning the cues whereas five of them follow a navigation cue presented by the photographer and hence focus on eliciting more navigation-relevant information. In 14 cases it is the photographer who presents a first-position turn involving a navigation cue. The collection contains a total of 29 navigation cues. Thus, more than one navigation cue may occur in a sequence. The photographers actually typically present two consecutive cues, one specifying the photograph and the other its expected direction: *Mari Mäkinen (.) se taitaa olla siellä jossai ylempänä* 'Mari Mäkinen ((name of the participant)) (.) it's probably somewhere up there'. In two instances in the collection, another facilitator in the workshop interrupts by presenting a navigation cue.

The navigation activity itself is always the artist's responsibility and it is conducted through the embodied use of the technological objects. The artist scrolls the chat upwards or downwards and/or moves the mouse cursor on the screen. When the correct photograph appears on the screen, it is usually the person who has taken the photograph who recognizes the picture first. This is done through a deictic expression, most typically *siinä* 'there', which is found in 10 cases. Other deictic expressions in this position are *toi/tossa* 'that/there' in four cases and *tässä* 'here' in one case. In two sequences, the deictic expression *siinä* is accompanied by a pointing gesture by the person who has taken the photograph. The navigation is concluded successfully when the artist opens the right photograph using the mouse cursor.

## **5. Stepwise Adaptation Towards Relevant Affordances During Navigation Sequences**

As already noted, the chat environment is not used in a traditional way in this data. This means that the participants in the workshop have to gradually gain an understanding of the relevant affordances of the chat in this particular context. We have split our analysis into three sections: In section 5.1. we analyze the first navigation sequence in the workshop. In section 5.2. we focus on sequences during the middle part of the workshop, and in section 5.3 on those during the latter part of the workshop. This enables us to capture the adaptation process concerning the affordances of the chat and how they are realized through navigation cues. We are also able to depict the formation of co-operation between the artist and the photographers.

Since our collection is rather small, we cannot completely exclude the possibility that some features in the data might be situational and hence not indicative of the participants' growing understanding of the relevant affordances of the task. However, we have selected examples for analysis so that they would represent



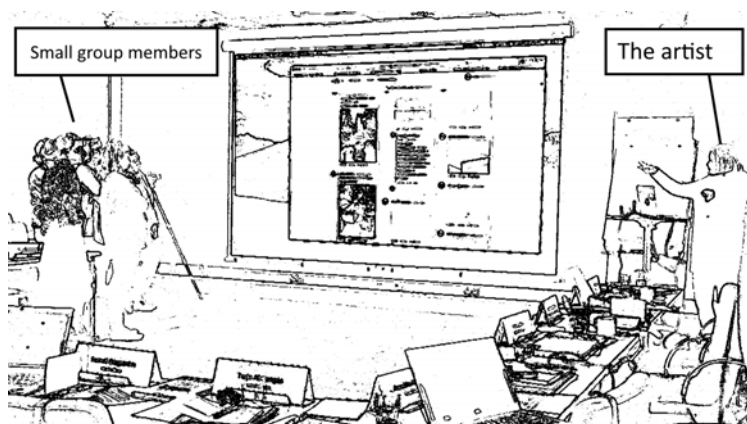
a typical case in each phase of the workshop (beginning, middle, and the latter part). Thus, our aim is to present phenomena that not only feature in an individual sequence but also more commonly in our collection. It is worth mentioning, however, that change in activities is always gradual.

### 5.1. The early part of the workshop: the organizing party has an active role in guiding the navigation activity

In the first extract, we illustrate how the artist does a lot of supporting work in the very beginning of the workshop to launch and then further the navigation task. However, the correct photograph is finally recognized jointly by the artist, the photographer and another facilitator, Kaarin, who takes part in the discussion. We have divided this longish excerpt into two parts: In excerpt 1A, we focus on the launching of the navigation process and in excerpt 1B, we focus on recognition of the right image. Excerpt 1 is the first navigation sequence in the workshop.

Before the extract, the artist has given the participants background information about the upcoming task, i.e., how they should interpret and explain the photographs in a metaphorical way. She has also invited a small group to stand before the rest of the participants to present their photographs, one at a time. The artist herself is standing behind her laptop, and the chat is projected on the screen in the middle. Figures 1 and 2 show the setting from the two camera angles.

**Figure 1.**



**Figure 2.**



Before the participants are able to initiate discussion on the photographs, they need to complete another task, that is, to navigate towards a photograph in the chat environment. The artist (A) initiates the navigation sequence by announcing that they will start with the small group standing in front of the other people present (line 01).

**Excerpt 1A.**

- 01 A: \*.hh elikkä alotetaa teistä.  
.*hh so let's begin with you*  
\*A gazes at participants
- 02 (1.0)
- 03 A: kuka haluaa olla eka joka esittää  
*who wants to be the first one to present*
- 04 oman °kuvansa° (.) \*>oot sä,<  
*(one's) own photo (.) are you*  
\*A points towards one member of the  
group
- 05 M: mä voin \*olla joo.=  
*I can be yeah*  
\*A places hand on mouse
- 06 A: =\*okei mikäs sun nimi  
*okay what was your name*  
\*A turns gaze to computer screen
- 07 [olikkaa ]  
*again*

08 M: [\*Haapasa]lmen Mia.  
 ((last name, forename))  
 \*A moves mouse cursor around one photograph

09 \* (0.4)  
 \*A starts scrolling down

10 A: \*Mia.  
 ((repeats forename))  
 \*A scrolls down

11 \* (1.6)  
 \*A scrolls down

12 A: \*mä en ehtiny heittää näitä nyt  
 I didn't have time to toss these now  
 \*A scrolls down

13 \*mihinkä kansioon joten tää menee  
 into any folder so this will be  
 \*A scrolls down

14 \*tämmöseks vähä \* (0.3) <skrollai↑luks>  
 a little like this kind of scrolling  
 \*A scrolls down  
 \*A stops scrolling when she has reached  
 the lowest photograph in the set

15 \* (4.0)  
 \*A opens more photograph by clicking with the mouse and  
 continues scrolling down

16 A: \*sano heti ku näät om[an kuvan].  
 tell (me) right away when you see your own photo  
 \*A scrolls down

17 M: [jes: ha ha  
 yes ha ha

In lines 03-04, the artist enquires who is willing to go first and present their photograph. Without waiting for a response, she suggests one person from this group to begin. When she has received confirmation from the selected person (Mia) in line 05, she poses yet another question: *okei mikäs sun nimi olikaa* 'okay what was your name again' (lines 06, 07). During this question, the artist prepares herself for scrolling the chat view by turning her gaze towards the computer screen. Her hand is already placed on the mouse.

The question on lines 06-07 prompts a relevant navigation cue: the name of the participant. It shows orientation to a feature afforded by the chat, namely, that the first name and the last name of the person who has published the chat message are visible alongside the message containing the photograph. It is thus

possible to recognize the right photograph based simply on the photographer's name. In this turn, the artist directs the participants' attention to the logic of the chat: what kind of affordances are crucial for finding the photograph in this environment. Furthermore, she invites Mia to join the navigation task by showing that her name is information that the artist herself lacks at that time.

When the artist has received the participant's name (line 10), she immediately starts scrolling down (line 11). In this way, she orients to yet another affordance of the chat environment, the scrollability and the chronological top-down ordering of messages. Before she starts scrolling, the mouse cursor is located at the upper edge of the set of photographs. Therefore, she can expect to find the right photograph below and does not need the information concerning the direction of the photograph in the chat (up/down).

Significantly, the artist does not merely scroll downwards but engages in explaining her embodied activity (lines 12–14). First, she produces an account (*mä en ehtiny heittää näitä nyt minhinkä kansioon -- 'I didn't have time to toss these (photographs) now into any folder --'*). Second, she addresses the fact that the chat environment may not be best suited for the activities they are engaged on: *joten tää menee tämmöseks vähä (0.3) <skrollai↑luks> 'so this will be a little (0.3) like this kind of scrolling'*. Since she does not offer any solution to the problem, she indicates that the group needs to adapt to the situation.

At line 14, the artist has already reached the lower edge of the chat view, but the right image has not yet been located. It turns out that more photographs exist that are not yet visible, and so the artist opens them by clicking with the mouse button (line 15). While scrolling down, she presents a directive formulated with an imperative structure (line 16): *sano heti ku näät oman kuvan* 'tell (me) right away when you see your own photograph'. Rouhikoski (2021: 66), who has investigated the formulation of Finnish directives, observes that imperatives are often utilized in contexts where the speaker directs an already ongoing activity that is shared by both the speaker and addressee. Hence, by using an imperative, the artist involves Mia in their common navigation project of finding Mia's photograph. The artist also indicates that Mia is an epistemic authority who has the right as well as the responsibility to recognize the image in question.

We can summarize the first part of this excerpt as follows: In the very beginning of the workshop, co-operation is mainly guided by the artist. She solicits navigation-specific information by posing questions and inviting the person who has taken the photograph to join in the common project. Moreover, she explains the task and the appearance of the digital surroundings to the group. When we examine the participants' orientation towards the affordances of the chat, we could even state that in the first navigation sequence of the workshop, the chat environment is mainly the artist's resource for accomplishing action. Similarly, Heinonen et al. (2021: 9–12) point out that in the beginning of a remote service demonstration the shared screen is mainly the salesperson's resource. The

prospective customer remains in a more passive role before gaining sufficient understanding of the software solution.

We now turn to the second part of this excerpt (1B). In this section, we show how the correct photograph is finally recognized jointly by the artist, the photographer and another facilitator, Kaarin. In this workshop, Kaarin has acted as technical support for the participants in helping them to upload their photographs in the chat.

### Excerpt 1B.

- 16 A: \*sano heti ku näät om[an kuvan.  
*tell (me) right away when you see your own photo*  
\*A scrolls down
- 17 M: [jes: ha ha  
*yes ha ha*
- 18 K: se o viimeinen ku \*Mia oli eka.  
*it's the last one as Mia was first*  
\*A scrolls past the right photograph
- 19 M: \*joo. (.) siinä,  
*yes (.) there*  
\*the mouse cursor reaches the last photograph in the line
- 20 (.)
- 21 A: si\*i[nä,  
*there*  
\*A scrolls back to reach the right photograph and opens it
- 22 K: [no joo,  
*well alright*

It has already become evident that in this sequence finding the correct photograph has been somewhat delayed. The artist has opened more photographs and is still scrolling downwards looking for the right image. At this point (line 18), Kaarin interrupts and gives the artist another navigation cue: *se o viimeinen ku Mia oli eka* 'it's the last one as Mia was first'. In this turn, Kaarin shows orientation towards an affordance connected to scrollability and the ordering of the chat messages: the message that has been sent first, shows last on the chat page. Accordingly, Kaarin suggests that Mia was the first to post her message along with her photograph, and thus her photograph is now located lowest down in the set of photographs. This turn implies that it is essential for Kaarin to interrupt since she possesses relevant information on the situation as well as the *technological competencies* (cf. Moorhouse, Li & Walsh 2023: 120, 121) required

to do this task. She understands the logic of the chat, recognizes Mia by name, and suggests that she even knows when Mia published her photograph in the chat.

During Kaarin's turn, the artist has finally reached the photograph they have been looking for. At line 19, Mia reacts to this by producing the deictic expression *siinä* 'there' that can be used to direct the participants' attention to a specific point on the shared screen (cf. Heinonen et al. 2021: 9-11, 16-18). According to Hindmarsh and Heath (2000), such a deictic expression also encourages the co-participant to look for a salient object in the physical world at the very moment it becomes relevant. In line with this finding, Mia reacts rapidly when her photograph appears on the shared screen and is potentially recognizable. Unfortunately, when she utters her turn, the mouse cursor has just passed her photograph and reached the next image in the line. It now becomes evident that Mia's photograph is not the last image after all, but second to last. The artist quickly repairs her activities: she produces the same deictic expression *siinä* (on line 21) and returns to the right image. The navigation concludes successfully when the artist opens this image by clicking it with the mouse cursor. Kaarin also reacts with the turn *no joo* 'well alright' that indicates that she has recognized the mistake in her navigation cue. The last part of excerpt 1 illustrates that even though the organizing party possesses a more active role in the very first sequence of the workshop, finding the right photograph is always done in co-operation by the organizing party and the photographer.

5.2. In the middle of the workshop: by presenting navigation cues, the photographers display growing understanding of the relevant affordances

While the first excerpt (Excerpt 1) involved a lot of supporting activities by the organizing party, the other workshop participants soon take a more active role in the task of navigation: they start to offer relevant navigation cues independently. However, it takes time before the navigation task is routinized. For example, in the second and third sequence in the workshop, the photographers only produce one navigation cue. This is not enough to lead the artist to the correct photograph, which is why she prompts another cue in both cases.<sup>1</sup>

We will continue the analysis by looking at the navigation activity in the middle of the workshop now that the activity has been routinized. Excerpt 2 comes from 10th navigation sequence in the workshop, selected to illustrate how the navigation progresses in seamless co-operation between the artist and the photographer. It also demonstrates that it is no longer the artist alone who

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<sup>1</sup> In the second extract from the workshop, the artist receives the participant's name as a navigation cue but does not know which direction she needs to scroll in to find the target photograph. In contrast, in the third extract she is given the direction to scroll in as a cue but does not know which photograph is in question.

orients to the features afforded by the chat – as in the first extract – but also the person who has taken the photograph. In this extract, since the artist’s activities are mostly non-verbal, we illustrate the central phases of the navigation with figures.

### Excerpt 2 .

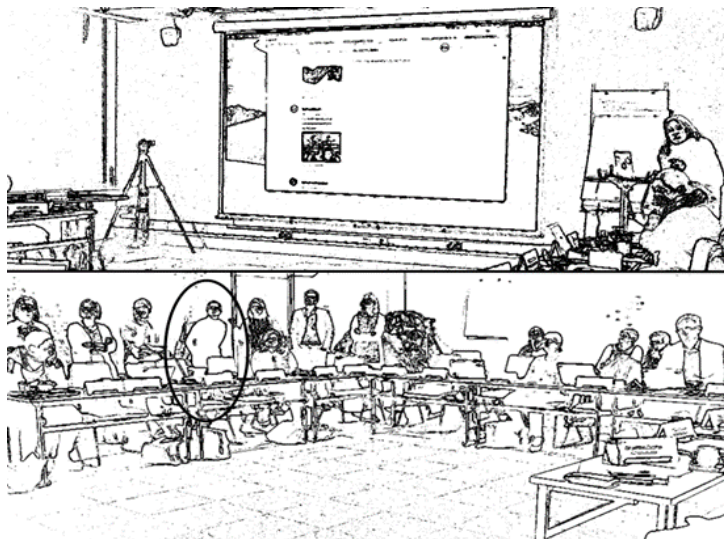
01 A: otetaan seuraava ryhmä. (0.6) vaikka \*te sieltä,  
*let's have the next group (0.6) you for example*  
\*A points

02 (.)

((five lines omitted))

08 E: \*Enn#i  
*(first name)*  
\*A glances at the audience  
#figure 3

Figure 3: The artist glances at the group members while Enni articulates her name

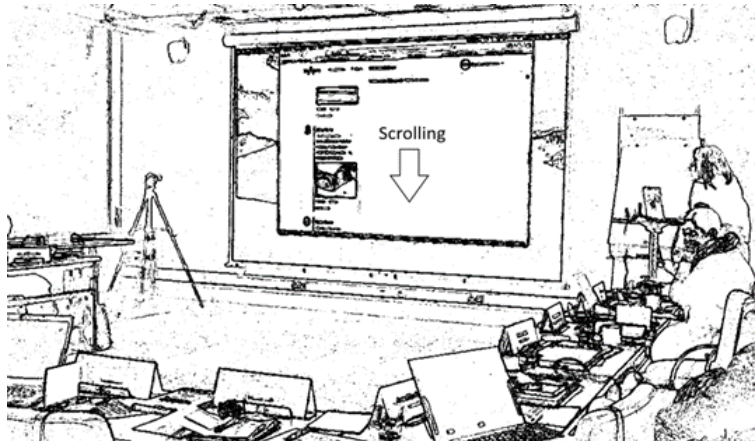


09 \*Mäki.  
*(last name)*  
\*A turns face back to the computer screen

10 kröhm: \*mä oon aika siellä alhaalla  
*(coughs) I'm there quite downwards*  
\*A approaches line of the photographs with the  
mouse cursor

11      va\*rmaan.#  
         probably  
         \*A starts scrolling down  
         #figure 4

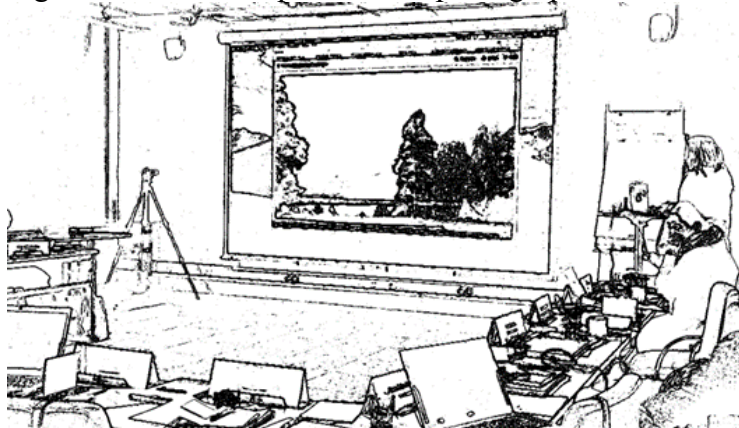
Figure 4: The artist scrolls down



12      \*(3.7)  
         \*A scrolls down

13 E:    sii\*nä.#  
         there  
         \*A moves mouse cursor onto the correct photograph and  
         opens it  
         #figure 5

Figure 5: The artist opens Enni's photograph



In the beginning of extract 2 (line 01), the artist orients to topic transition: she announces that the photographs of a next small group will be discussed. She chooses this small group verbally and by pointing towards the group with her finger. During the omitted lines, the participants in this group discuss who will go first, but they do not come to a clear decision. At the same time, the artist gazes at her computer. She closes the photograph taken by the last member of the previous small group. Thus, the artist prepares her activities in such a way that she is ready to navigate towards the next photograph.



The navigation sequence starts when the artist glances at the small group (line 08, figure 3). Simultaneously, one member of the group (Enni, indicated with a circle in figure 3) self-selects as the person whose photograph is to be displayed for discussion. She does this by stating her first name (line 08) and last name (line 09). By articulating her full name in this sequential position, Enni not solely selects herself as the next speaker but does this in such a way that it fulfills the requirements of the ongoing task. The turn implies that Enni orients to the name of the photographer as an important navigation cue, and her turn reflects the affordance that the workshop participants' names and the chat messages (containing the photographs) co-appear in the chat.

While the photograph can be identified based solely on the photographer's name, this cue alone is often not enough to achieve a smooth navigation process. Therefore, Enni's following turn (lines 10, 11) contains another cue: *kröhm: mä oon aika siellä alhaalla varmaan* '(coughs) I'm there quite downwards probably'. In this turn, Enni orients to the scrollability and the chronological top-down ordering of the chat messages. Thus, she gives the artist a hint on the scrolling direction (upwards or downwards) needed to find her photograph. Nielsen (2012: 102, 103) has pointed out that once the participants learn to recognize the "script" of the workshop, it makes it easy for them to fulfill their expected role. Enni's turn indicates that she is familiar with the "script" of this workshop: she recognizes the relevant affordances of the chat and is able to offer relevant navigation cues based on them.

It is significant that during this sequence the artist largely remains silent, rendering her role very different from that in the beginning of the workshop (extract 1). Her embodied action, however, plays an important role in the navigation task. As the photographer begins her suggestion on the placement of her photograph (line 10), the artist starts approaching the set of photographs with the mouse cursor. Importantly, the artist only starts scrolling downwards (line 11, figure 4) after Enni has produced the word *alhaalla* 'downwards'. Hence, these kinds of mouse cursor movements are finely coordinated with the ongoing talk, thereby displaying the participants' orientation to teamwork (cf. Olbertz-Siitonen & Piirainen-Marsh 2021). The artist's on-screen activities also show orientation towards the affordances of the chat.

The artist then scrolls downwards for 3.7 seconds (line 12). When the right photograph appears on the screen, Enni reacts by producing the same deictic expression *siinä* 'there' (line 13), as used in the previous extract. Simultaneously, the artist places the mouse cursor on the right photograph and opens it (figure 5). By producing a deictic element in this sequential position in our data, the person who has taken the photograph displays their being in a position where they have first-hand knowledge about the correct photograph and hence are required to point it out to the artist.

The deictic term *siinä* is significant itself since it conveys the meaning that a speaker is placing the referent (in our case the photograph) in the addressee's

sphere and indicates that the referent is adequate for addressee's activities (cf. Laury 1997: 59, 77-79; see also Harjunpää, Niemi & Sorjonen 2020: 913-916). Thus, when the photographers use the deictic expression *siinä* they are orienting to the circumstances where it is primarily the artist who can take actions with the photograph in the digital environment, i.e., select and open it with the mouse cursor.

On the formation of co-operation in the course of a software demonstration, Heinonen et al. (2023) found that as the prospective customer acquired more information about the software, he was able to adopt a more active role. Accordingly, he was able to guide the salesperson's actions on the shared screen. This finding is in line with our analysis on the co-operation between artist and photographer during the middle part of the workshop. In excerpt 2, we have demonstrated that as the workshop proceeds, the photographer's participation changes, as it becomes more independent of the supporting activities of the artist. The photographer displays understanding of the demands of the navigation task and, in concert with the artist, is able to orient to the affordances of the technological environment. Thus, the photographer is able to produce navigation-relevant cues at the right moment and guide the artist whose responses are mainly non-verbal.

It is worth mentioning that the 9th and 11th sequences of the workshop are very similar to that in the above excerpt. In all these cases, the photographer guides the navigation by presenting a combination of two cues: their name and the scrolling direction. Thus, it can be stated that some kind of routinization of the activity has been achieved by the middle of the workshop.

A further interesting feature in the formulation of the navigation cues in the data is that they typically contain slight reservations with regard to the direction of target photograph in the chat. Enni, for example, uses the reservation *varmaan* 'probably' (line 11) in extract 2. Thus, she indicates that she is not fully committing herself to the assumed location of her photograph. Two other examples of the photographers' turns that contain slight reservations are *se oli siellä (.) mt alempana ehkä* 'it was there (.) mt further down **maybe**' and *mä luulen et se oli pikkuse ylös (.) tai itse asiassa alaspäin tais olla* '**I think** that it was a little bit further up (.) or actually **it was probably** further down'. These kinds of reservations can reflect an understanding of the changing appearance of the chat: as the participants upload their photographs one by one, the appearance of the chat environment is constantly being modified. For example, the photo that appeared first in the set of photographs at some point, can later appear in some other location.

### 5.3. The latter part of the workshop: participants orient to the shared responsibility of finding the correct photograph

In this last section of the analysis, we demonstrate how the co-operation between the artist and the photographers alters in the latter part of the workshop as they begin to orient towards the shared responsibility of finding the correct photograph in the chat. We will also show how the photographers modify the task of navigation by starting to use a different type of navigation cue than earlier in the workshop.

Excerpt 3 is the 12th navigation sequence in the workshop. This sequence is initiated when the artist picks Matti<sup>2</sup> as the next speaker (*mites sun* ‘how about yours’, line 01). Then she turns towards her computer to close the previous photograph. Matti orients to the navigation task – already familiar to him – by giving a navigation cue: *sit oli se sanomalehti* ‘then it was the newspaper’ (line 04). Significantly in this excerpt, the navigation cue is the topic of the photograph (“the newspaper”), rather than Matti’s name (compare with extracts 1 and 2). Accordingly, Matti’s turn relies on the affordance of being able to see the topic of the image inside the chat, in other words, being able to see that there is a newspaper in the picture.

#### Excerpt 3.

01 A: \*mite\*s sun.  
*how about yours*  
\*A looks at M, makes a small pointing gesture  
\*A looks at the computer, places hand on mouse

02 \*(0.6)  
\*A moves the mouse cursor towards the right upper corner  
of  
the screen in order to close the preceding photograph

03 M: sit oli se sanomaleh\*ti.  
*then it was the newspaper*  
\*the previous photograph closes and  
the  
set of photographs appears on the  
screen

04 siinä se o siin \*pyöriny.  
*there it has been coming and going there*  
\*the mouse cursor arrives in the middle  
of the set of photographs

05 (0.3)

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<sup>2</sup> Matti is the last person in this small group whose photograph has not yet been discussed.

- 06 A: onks se \*ale[mpana vai,]  
*is it further down or*  
 \*A makes a quick scrolling movement upwards
- 07 M: [alaspäi ]  
*further down*
- 08 M: \*mum mielestä. (.) se oli siin  
*in my opinion (.) it was there*  
 \*A begins to scroll downwards
- 09 vähä yläpuolella  
*a little bit upwards*
- 10 (se pö[nttö.)  
*(the bowl)*
- 11 A: [\*tossa.=  
 (that) there  
 \*A places the mouse cursor on the correct  
 photograph  
 with a quick movement
- 12 M: =siinä.  
*there*
- 13 A: \*°.hjoo°  
 .yeah  
 \*A opens the photograph with the mouse cursor

Extract 3 (12th sequence in the workshop) seems to function as some kind of a watershed when it comes to choosing a navigation cue. Before this sequence, the photographers have tended to offer their first and last name as a navigation cue (often combined with a cue as to the direction of the photograph). In this 12th navigation sequence and thereafter, they begin instead to offer the topic of the photograph as a cue. Thus, a change can be seen in what is perceived as a relevant navigation cue in different phases of the workshop. In our view, this change is connected to the recurrent nature of the navigation project: since the participants observe the same photographs time after time, they gradually learn to remember the topics of the photographs and maybe even their order. While the name of a participant is a precise navigation cue in the beginning of the workshop, in the long run, the topic of the photograph is probably easier to remember.

Let us now examine the turn design of Matti's navigation cue (line 03) more closely: he uses the past tense (*sit oli* 'then it was') and the pronoun *se* ('that'/'the'). Earlier research on Finnish demonstrative pronouns (Seppänen

1996: 79, 80; Etelämäki 2009: 28-30) has shown that constructions involving the pronoun *se* typically continue an activity that the participants share and that has been initiated earlier. Furthermore, Laury (1997: 59) suggests that by using *se*, a speaker places the referent in the addressee's sphere. In the light of these findings, we can suggest that by using the past tense and the pronoun *se* Matti connects his turn to an already ongoing navigation project. Furthermore, he suggests that the photograph is already known and accessible to the artist.

Now that the previous photograph has closed and the set of photographs appears on the screen (line 03), it is possible that Matti could give another navigation cue and specify the expected direction of scroll for finding his photograph (compare with extract 2). However, Matti does not act in this way. He continues his turn with *siinä se on siin pyöriny* 'there it has been coming and going there' (line 04). This turn implies that the photograph has already been on display, "coming and going there" (line 04), and everybody has had a possibility to spot it. Here again, the use of the perfect tense (*on -- pyöriny* 'has been coming and going') along with the pronoun *se* 'it' hints that the photograph is known to the members of the workshop. In this way, Matti opens up an implicit negotiation where the *deontic authority* – namely the right to determine others' future actions – comes into play (see for instance Stevanovic & Peräkylä, 2012). Here, this negotiation concerns the responsibility for finding the photograph to be used in the exercise. Matti alters the expectations concerning the roles of the participants during the navigation task: he orients to the artist being as capable as he himself of remembering and recognizing the photograph in question. In this way, he implicitly involves the artist in the activity of finding his photograph.

During Matti's turn the artist has moved the mouse cursor into "a waiting position" in the middle of the set of the photographs (line 04). Matti does not, for now, produce more navigation cues, and there is a slight pause in line 05. The artist then begins searching for the photograph independently as she scrolls upwards. However, at the same time she produces an interrogative *onks se alempana vai* ('is it further down or', line 06) which still treats Matti as an epistemic authority: the artist invites Matti to confirm her assumption, which he does in an overlapping turn on lines 07 and 08. Significantly, however, the artist's turn hints that she actually has an idea, i.e., knowledge about the location of Matti's photograph in the chat.

Now the participants begin to orient towards collaboration: Matti offers more cues on the whereabouts of his photograph (lines 08–10) while the artist scrolls downwards in accordance with Matti's instruction. Finally, the artist produces a deictic term *tossa* (*that there*, line 11) when she spots the photograph. This is an exceptional turn in our data since typically it is not the artist but the photographer who reacts by producing a deictic expression as the correct photograph comes into view. According to Laury (1997: 74, 75; see also Etelämäki 2009: 36) *toss(a)* – or *tuossa* in standard Finnish – can serve in the function of a pointer as well as create a mutual perspective between a speaker and an addressee. Matti himself

concludes the task of navigation by producing another deictic term, *siinä*, which places the referent, the photograph, in the artist's domain.

In this extract, we have shown that as the workshop members gain understanding of the task as well as the affordances of the technological tool, they are able, in the latter phase of the workshop, to modify the implementation of the navigation task. In excerpt 3, this is done by converting the name-based navigation cue into a topic-based cue. In this way, the photographers find solutions for more effectively completing the navigation task. Moreover, in the last part of the workshop, the participants start treating the photographs as already familiar to everybody. Consequently, they typically formulate the navigation cues using the past tense and pronoun *se* 'it', as seen in extract 3. Two other examples of this are *mul oli ne koivut siellä* 'I had the birches there' and *mul oli ylhäällä (.) se istuinryhmä* 'mine was up (there) (.) the group of chairs'. In the beginning of the workshop the present tense is more commonly employed.

Let us briefly look at a final excerpt (excerpt 4) which is the last navigation sequence in the entire workshop. In this fragment, we find more evidence for the assumption that the participants' co-operation has evolved during the workshop. In excerpt 4, this means for example that the artist adopts a more active role in remembering and "knowing" the right photograph (compare with extracts 1 and 2). Here we display only the most central turns in the sequence. Before jumping in, the artist has picked one group member (Hanna) to explain her photograph. Hanna's turn in line 01 includes an excuse for why she was the last person to upload her photograph in the chat. Simultaneously, her turn works as a navigation cue which reflects the affordance of scrollability and the top-down ordering of the chat messages.

#### Excerpt 4.

01 H: \**se on se: (.) viimesin ku mul oli teknisiä ongelmia.*  
*it's the last one since I had technical problems*  
\*A moves the mouse cursor towards the right upper corner  
of  
the screen in order to close the preceding photograph

02 (0.2)

03 A: \**elikkä \*se on se lamppu,=*  
*so it's the lamp*  
\*the preceding photograph closes down  
\*A moves the mouse cursor into the middle of the  
set of photographs

04 H: =\**<lamppu.>*  
*the lamp*  
\*A starts scrolling upwards

In line 03, the artist presents a *candidate understanding* (cf. Antaki 2012) on the topic of Hanna's photograph: *elikkä se on se lamppu* 'so it's the lamp'. This turn indicates that the artist already remembers the topics of the photographs as well as their order while nevertheless inviting Hanna to confirm the accuracy of her proposal. Furthermore, her embodied actions are significant, as she begins scrolling the chat view upwards (line 04). In this way, she shows her comprehension that the referent *viimesin* ('last one') in Hanna's turn (line 01) actually refers to the first photograph in the set. This extract demonstrates how the participants are now truly familiar with the affordances of the chat. Their cooperation is seamless as they fluently make use of different kinds of navigation cues and embodied activities to jointly solve the navigation task at hand. In excerpt 4, the correct photograph soon comes up (not shown in the fragment).

In this section, we have showcased how the position and the participation of the artist and the photographer alter in the course of the workshop. By the end of the workshop, they have gained sufficient knowhow concerning the requirements of the task as well as the relevant affordances of the technological tool. In excerpt 3, the photographer significantly reduces the expectations that he would be the only person who knows the location of his photograph. He orients towards a state of affairs where the artist as well as he himself can recognize and remember the right image. In excerpts 3 and 4 the artist adopts a role in which she does not merely follow the navigation cues of the photographer. In excerpt 3, she points out the correct photograph by using the deictic expression *tossa*. In excerpt 4, her embodied and verbal activities indicate that she knows the logic of the chat and remembers the order of the photographs.

Whereas in the first extract of the workshop the artist was active in supporting and explaining the task of navigation, in the last part of the workshop (extracts 3 and 4), she is active in remembering and recognizing the photographs alongside the photographers. This becomes evident for example through candidate understandings such as *onks ne- ne o vähä alempana* 'are they- they are a little bit further down right' or *elikkä se on se lamppu* 'so it's the lamp'. Significantly, however, the artist – throughout the entire workshop – treats the photographers as epistemic authorities who have the primary right to know the location and the topic of their photograph.

We can conclude that during the last part of the workshop both parties begin to orient towards the shared responsibility of finding the right photograph. In a similar way, Pekarek Doehler and Balaman (2021) have shown that repeated tasks in the digital environment lead to circumstances where some kind of "routinization" of practices takes place and the participants begin to increasingly embody the collaborative nature of the task.

## 6. Conclusions

In the contemporary workplace, employees recurrently encounter various ad hoc practices that require adaptation. Many of these practices involve the use of digital tools. These tools may also be used in ad hoc ways that may not have been anticipated by their designers (see e.g., Boudreau & Robey, 2005; Salomaa & Lehtinen, 2023b). For employees facing an ad hoc task, it is not important in itself to use tools correctly, but to get the task done with the tools available to them. This article offers an example of a process where the members of a leadership workshop gradually adapt their activities to the requirements of the task at hand, digital navigation, as well as make use of the task-relevant affordances of a technological tool, a chat. In this case, it is highly relevant that during the task of navigation the chat is not used remotely, but rather as part of face-to-face interaction where it is projected on a screen for everyone to see. Thus, while earlier longitudinal conversation analytic research (see Deppermann & Pekarek-Doehler, 2021) has shown how changes happen over time as individuals encounter similar activities repeatedly, our analysis shows how change can take place during a single encounter in a group setting where members of the group learn through observing others' actions in repeated interactional sequences. Thus it seems that routinization of activities can happen in a group setting (see also Nielsen, 2012). It may be that routinization happens particularly in activities like the one analyzed here, which is not the main activity in the task at hand. Instead, navigating is a necessary anterior activity that must be done before moving on to the main task, i.e., explaining the photographs. In such cases, routinization is especially expedient, as it enables a quicker transition to the main task.

The study demonstrates that three affordances of the chat environment play a crucial role during the navigation sequences: first, scrollability and the chronological ordering of the chat messages; second, the occurrence of the name of the poster alongside the chat message, and third, the observability of the pictures (in this case photographs) attached to the chat messages. In line with these affordances, the concrete navigation cues turn out to be the location of the photograph on the chat platform, the name of a photographer and the topic of the photograph. The more conversational affordances of liking and commenting on a chat message do not turn out to be relevant at all. Thus, as Meredith (2017) has pointed out, it is important not to assume that the affordances of a technological tool predetermine its use. Rather, we should analyze the interaction as such and then show how the participants themselves orient to the tool's affordances, i.e., which affordances they use and how. In our case, the intertwinedness of technology use with face-to-face interaction turns out to be vital. Orientation to affordances hinges on, first, the technological platform being projected on a screen, second, the manipulation of the platform by only one member of the group during the face-to-face encounter, and, third, on all the participants having had online access to the platform and using it for uploading their photographs. Accordingly, the participants' actions are



contingent on observing what is on the screen at any given moment in relation to what they remember about things on the platform that are not observable at that moment.

Furthermore, the analysis demonstrates that co-operation during navigation is smooth when all the participants, both the artist in charge of the workshop and the workshop participants, are able to orient to the logic of the chat environment and utilize its affordances in a situated way that is appropriate for the task at hand. As we show, this is a learning process. In the beginning of the workshop, the navigation task is strongly supported by the artist. In this phase, the chat environment is mainly the organizing party's resource for accomplishing actions. Soon, however, the workshop participants adopt a more active role in guiding the navigation, whereas the artist focuses more on the embodied activities on the screen, such as scrolling, moving the mouse cursor and clicking. Towards the end of the workshop, the participants orient to a shared responsibility for finding the correct photograph.

Changes are also observed concerning which navigation cues are central in different phases of the workshop. In the beginning of the workshop the name of a participant seems to be a precise navigation cue alongside the location of the photograph. Later in the workshop, names are used less as a cue, whereas the topic of the photograph becomes more important. Thus, the study shows how the participants jointly modify the activity of navigation as they learn to conduct the task more effectively.

In practice, our study suggests that employees need situated digital skills. It is not enough for them to learn the most obvious ways of using digital tools as described in manuals. Rather, an essential skill is the ability to improvise and to adapt to ad hoc task-specific ways of using digital tools. Such improvisation has been noticed in earlier research. For example, Boudreau and Robey (2005) show how employees invent what they call "tweaks" to overcome perceived limitations in an information system: for example they might use a "comments" field to compensate for a field that was so short that it could not accommodate all the necessary information. Another example is the study by Salomaa and Lehtinen (2023b), where employees used the chat function or a text widget for note-taking when the system did not provide a proper note-taking function. Such improvisation has been described by Wimelius et. al. (2021) as the "tension between deliberate and emergent practices". What our analysis shows is the process through which employees learn to use such a situated, emergent procedure during an actual workplace encounter.

Our study also has ramifications for organizations and designers of technological tools. When choosing digital applications and platforms, organizations would do well to chart the different organizational tasks they will potentially be used for, giving particular consideration to how the same tools may be used both remotely and during face-to-face encounters. For example, the task we investigated required both uploading photographs remotely and discussing them face-to-

face. For designers, it is also important to understand how the tools are actually used. Our research suggests, on the one hand, that technology use may happen in a highly situated ad hoc fashion so that it is not possible or even advisable to try to anticipate all concrete contexts of use. On the other hand, however, our research points towards designing platforms that are as flexible as possible, accommodating both remote and face-to-face contexts.

## **Acknowledgements**

This study was supported by the Research Council of Finland (grant number 322733)

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