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People with dementia positioning themselves as learners

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Abstract

Recent studies have demonstrated that people living with dementia, contrary to common believes, are capable of novel learning without structured interventions. Opportunities for learning throughout an individual's lifespan have been acknowledged as important factors in facilitating social participation and promoting wellbeing. However, little is still known about the situated practices used in the learning process for people living with dementia. The aim of this study is to explore how people living with dementia in Swedish residential care facilities position, perceive, and assert, themselves as learners in a novel activity. The study is based on video recordings of eight people living with dementia, who for the first time use tablet computers as a social activity on a one-to-one basis with their formal caregivers. Through interaction analysis we show how the participants living with dementia use the engagement displays of requests, accounts, formulations and metacommments to make their active undertaking in the ongoing activity public to their communication partner. Our findings suggest that people living with dementia might still perceive themselves as individuals capable of novel learning and that they are active and engaged agents in this process.

Introduction

Life with dementia in residential care facilities is rarely associated with novel learning experiences. As argued by Kydd and Fulford (2020), residential care facilities are typically viewed as settings where older adults go to spend their final days, not to fulfill their potentials. In Sweden, it is estimated that 42% of people diagnosed with some type of dementia, commonly in the moderate or late stages of the disease, live in residential care facilities (Marcusson, Blennow, Skoog & Wallin, 2011; National Board of Health and Welfare, 2014).
Due to diagnostic connotations and the irrevocable decline of cognitive and linguistic abilities, people living with Alzheimer's disease, or other forms of progressive major neurocognitive disorders, are commonly portrayed as less than competent members of society and participants in interaction (Hydén & Antelius, 2017; Müller & Schrauf, 2014). As has been pointed out by several scholars, people living with dementia have been described as passive and uninvolved interlocutors, incapable of initiating social action and exerting agency, and unable to uphold focus and engagement in activities (Boyle, 2014; Ekström, Lindholm, Majlesi & Samuelsson, 2017; Kolanowski, Bossen, Hill, Guzman-Velez & Litaker, 2012; Majlesi & Ekström, 2016). Furthermore, despite numerous studies demonstrating the opposite (e.g., Duff, Gallegos, Cohen & Tranel, 2013; Ingebrand, Samuelsson & Hydén, 2020; de Werd, Boelen, Rikkert & Kessels, 2013), people living with dementia have been depicted as incapable of novel learning, that is lacking the ability to acquire new knowledge or to learn new skills (Dupuis & Gillies, 2014; Thoft, 2017).

Learning has often been studied in experimental settings and conceptualized as an individual phenomenon where the learner, through intent efforts, attains predetermined information that is to be recalled with as great accuracy as possible at a later stage (Säljö, 2011, 2017). This theoretical notion, combined with experimental study designs, has been the basis for most studies on learning involving people living with dementia, resulting in learning of low ecological validity (Ingebrand et al., 2020). Moreover, most studies on learning and dementia to date have had an outspoken focus on how rehabilitative interventions can be implemented in order for people living with dementia to relearn information or abilities that they once knew (Clare, 2008; Kudlicka, Martyr, Bahar-Fuchs, Woods & Clare, 2019). Quinn and Blandon (2017) argue that research on learning and dementia has been occupied with containment rather than expansion. Furthermore, they claim that an emphasis on retaining familiar activities
rather than enabling novel learning experiences in fact positions people living with dementia outside the realm of learning (Quinn & Blandon, 2017). Studying novel learning for people living with dementia is of importance since such research recognizes people living with dementia as agents capable of development despite living with a progressive condition (Hydén & Antelius, 2017).

In contemporary sociocultural and situated theories of learning, learning is not considered a process restricted to formal settings designed for teaching and learning, nor is it regarded as a strictly individual faculty (Lave, 2019; Melander, 2009). Instead, social and collaborative aspects of learning have been emphasized. As such, thinking, learning and knowing are regarded as processes distributed amongst individuals acting in concert with each other, and any potential artefacts, in an ongoing activity (Lave, 1993). The significance of collaborative and social aspects in facilitating learning for people living with dementia has further been emphasized in studies by Duff, Gallegos, Cohen and Tranel (2013), Ingebrand and colleagues (2020) and Rosenberg and Nygård (2017).

Apart from the interactive dimensions of learning, it has been acknowledged that older adults' perception of their own capabilities to a large extent influences subsequent performance in cognitive or physical undertakings (Lamont, Swift & Abrams, 2015; Levy, 2009). According to the stereotype embodiment theory (Levy, 2009), the self-perception of older adults might be influenced by prevailing age-stereotypes (e.g. old people are uninterested in, or incapable of, using new technologies) if these are internalized by the individual (Ivan & Schiau, 2016). However, self-perceptions of age-related capability do not necessarily entail negative performance (Brown, Kim, Stewart, Fulton & McCarrey, 2020). Brown et al. (2020) and Levy
(2009) argue that even momentary positive reinforcement, such as sense of success or external praise, might improve an individual's performance.

While people living with dementia indeed face many unquestioned assumptions regarding their capabilities in interaction, it is important to acknowledge that the deterioration of cognitive and linguistic abilities also entails certain communicative difficulties. Changes in memory functions, especially in episodic memory, are one of the most pronounced symptoms for people living with Alzheimer's disease (Marcusson et al., 2011). With a gradual decline of episodic memory functioning, that is the ability to remember autobiographical events and locating them in time and space (Baddeley, 2001), retrospective telling often becomes an immense challenge for people living with dementia (Hydén, 2018).

The fact that people living with dementia are likely to encounter difficulties in retrospective telling does not mean that their views, opinions and lived experiences should be trivialized or overlooked in research (Hellström, Nolan & Lundh, 2007; Örulv, 2012). However, as suggested by Hubbard, Downs and Tester (2003), Nygård (2006) and Smith, Mountain and Hawkins (2018), it might not be sufficient to rely solely on interviews when studying the experiences of people living with dementia. An alternative, or complementary, approach is to use a methodology that enables analysis of how the individual expresses his or her experiences in the ongoing situation, such as interaction analysis (Webb, Williams, Gall & Dowling, 2020).

Returning to the topic of learning and dementia, there are to this date and to our knowledge, few, if any, studies exploring how people living with dementia assert themselves as active and engaged learners in a novel activity (though see the interview and field notes based studies by Rosenberg & Nygård, 2014, 2017).

**Displaying in situ experience and engagement**
Participants in interaction immerse in what Clark (1996) calls joint activities. Joint activities, in turn, consist of embedded joint projects which progress sequentially through turn-taking and the participants' coordinated verbal and embodied contributions to the ongoing activity (Clark, 1996). Each turn, or contribution, to the ongoing discourse is a communicative action (Linell, 1998) designed to do something, and through their contributions, participants display their current understanding of the ongoing activity (Drew, 2013; Robinson, 2016).

The unfolding verbal and embodied contributions to the ongoing discourse are the means through which participants in interaction can explicate their present sense-making to their interlocutors (Linell, 2011). In the present study we refer to these contributions as engagement displays. For current purposes we suggest four types of engagement displays (accounts, requests, formulations and metacomments) that can be used as a way to study how people living with dementia experience and make their current engagement in the activity public to their communication partner. In this sense-making practice, a speaker's current contribution is other-oriented, in that in the subsequent turn, a co-participant acts upon the preceding turn as a recognizable action (Linell, 2007; Schegloff, 2007). As argued by Melander (2009), "the active work required to engage in shared and collaborative projects is considered a prerequisite for learning" (p. 17). That is, in order for people to learn something they need to position themselves as learners in the ongoing activity, and that is the focus of this study.

One way for a speaker to display her engagement is by providing an account when there is a need to mitigate any potential misunderstanding. By providing an account, the speaker explicates why the action is of relevance to the ongoing activity, thus serving to display her current understanding of the activity (Robinson, 2016). Through this pursuit of understanding,
participants continuously make their active engagement in the ongoing activity public (Drew & Penn, 2016). Another way participants in interaction can display their current understanding and orientation towards the joint activity is through requests (Potter, 2012). In producing a request for information, clarification or confirmation, the speaker displays that he or she is presumably less knowing than the addressee (Goodwin, 2018). Participants might also express their current, or changing, understanding of an ongoing activity with formulations (Küttner, 2019), through which the speaker summarizes or paraphrases something specific from the prior turns of the ongoing activity (Deppermann, 2011). Accordingly, by producing a formulation, a speaker foregrounds certain aspects of perceived relevance and consequently makes his or her candidate understanding of the activity thus far public (Deppermann, 2011; Peräkylä, 2019; Solem & Skovholt, 2019). In an even more overt fashion, participants in interaction may display their current understanding or experience by producing metacomments, that is talk about the ongoing activity (Clark, 1996; Linell, 2011).

Aim

From previous research it has been established that people living with dementia indeed are capable of novel learning (Clare, 2008; Duff et al., 2013; Ingebrand et al., 2020). However, little is still known about how people living with dementia position, perceive, and assert, themselves as learners in an ongoing activity. Therefore, the aim of this study is not to study learning per se but to shed light on how people living with dementia position themselves as learners, and engage in, the unfamiliar activity of using tablet computers; that is an activity in which novel learning could occur.

Materials and methods

Participants
Between 2018 and 2019, a total number of eight people living with dementia were recruited for participation from three different residential care facilities in two Swedish municipalities. The participants (Table 1), five women and three men, were between 55 and 96 years of age at the time of data collection. Additionally, eight formal caregivers participated in this study. The identification and recruitment of the included participants was aided by the operational managers of each residential care facility.

All of the enrolled residents had long-established and confirmed major neurocognitive disorders due to either Alzheimer's disease (n=6), substance use (n=1) or unspecified dementia (n=1). However, no formal testing was carried out to assess the cognitive or verbal level of the participants living with dementia prior to their participation in the study. As a means of attaining a symptomatic overview of the enrolled residents, the formal caregivers were asked to answer the Cognitive Impairment Questionnaire (Åstrand, Rolstad & Wallin 2010), an instrument commonly used in Swedish memory clinics. According to the formal caregivers' proxy-assessments, all participants living with dementia experienced clear difficulties with their episodic memory. None of the enrolled residents reported having any earlier experience of using touchscreen technologies prior to their participation in this study.

All participants and locations in this study are anonymized, ethical approval was obtained from the Regional Board for Ethical Vetting at Linköping University (2017/469-31) and the data collection was permitted by the participants through written informed consents.

**Table 1. Participant characteristics.**

<table>
<thead>
<tr>
<th></th>
<th>Age</th>
<th>Diagnosis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kate</td>
<td>83</td>
<td>Alzheimer's disease</td>
</tr>
<tr>
<td>Roman</td>
<td>66</td>
<td>Alzheimer's disease</td>
</tr>
<tr>
<td>Iris</td>
<td>79</td>
<td>Unspecified dementia</td>
</tr>
<tr>
<td>Name</td>
<td>Age</td>
<td>Diagnosis</td>
</tr>
<tr>
<td>--------</td>
<td>-----</td>
<td>---------------------------</td>
</tr>
<tr>
<td>Geri</td>
<td>96</td>
<td>Alzheimer's disease</td>
</tr>
<tr>
<td>Judi</td>
<td>90</td>
<td>Alzheimer's disease</td>
</tr>
<tr>
<td>Joan</td>
<td>55</td>
<td>Substance induced dementia</td>
</tr>
<tr>
<td>Simon</td>
<td>90</td>
<td>Alzheimer's disease</td>
</tr>
<tr>
<td>Roger</td>
<td>90</td>
<td>Alzheimer's disease</td>
</tr>
</tbody>
</table>

**Data collection**

The empirical basis of the present study consists of a total number of 22 video recordings, with a length ranging from 7 to 26 minutes respectively. The average length of the recordings was approximately 16 minutes and the total length of the data used for this study amounts to just below 6 hours. Each recording captures a person living with dementia when he/she is using a tablet computer as a social activity on a one-to-one basis together with a communication partner (i.e. a formal caregiver). All residents were provided with a personal tablet computer that had access to a wide selection of applications (see Figure 1) and were instructed to use one, or several, of them best suited to their interests. The participants were encouraged to use their tablet computers whenever they felt like it during the course of participation (four weeks). The activities were video recorded through two discrete cameras placed on tripods, one positioned in a front-facing angel of the participants and one positioned more to the side. The first author recorded all but two participants, Joan and Roman, for whom the recordings were carried out by the present formal caregivers instead. During the recording of an activity, the first author was only present in the room while starting and turning off the cameras. The activities were to be recorded on a weekly basis; however, some recordings were cancelled when the participant(s) felt unwell on the scheduled day of data collection. All recordings were conducted either in the common spaces of the residential care facilities or in the apartments of the residents.
Figure 1. Selection of applications.

Data analysis

In order to investigate the experiences that the participants living with dementia have as novel learners in the ongoing activity, this study is informed by practices of conversation analysis and multimodal interaction analysis, as suggested by Webb and colleagues (2020). Using this analytical stance together with video recordings of the activities allows for repeated viewings of the material and access to the participants' verbal and embodied conduct as it unfolded there-and-then. Thus, by drawing on video data of the participants' natural conduct in the ongoing activity, it is possible to explore their in situ experiences as learners in ways that would be difficult to attain through the use of field notes or interviews alone (Mondada, 2013;
As noted earlier, this might be of extra importance for people living with dementia as they often have problem with retrospective telling (Hydén, 2018).

In the 22 video recordings we identified a total number of 134 sequences where the participants living with dementia asserted themselves as novel learners by making their current understanding and engagement public to their communication partner. After establishing the collection of instances, the selected material was transcribed according to multimodal conversation analytic principles by the first author (Hepburn & Bolden, 2013; see Appendix 1 for transcription conventions). Following this, the first author repeatedly read the transcripts, scrutinized the video recordings, and made an initial categorization of recurring communicative actions through which the residents made their experience of, and engagement in, the ongoing activity public to their communication partner. The transcriptions, and the suggested categorizations, were subsequently screened by the other authors independently. Any disagreements were discussed until consensus was reached. From the collection of sequences, the four categories of engagement displays discussed above were used: (i) Requests, (ii) Accounts, (iii) Formulations and (iv) Metacomments. As a last step all excerpts presented in this study were translated from Swedish to English.

Results

In this section, we present results from the main categories along with descriptions of how the participants living with dementia used engagement displays to position and assert themselves as learners in the ongoing activities. While a majority of the 134 identified sequences involved engagement displays adherent to different categories, we elucidate each main category through excerpts that we consider to be typical cases of said category.
Table 2 presents a quantitative overview of the participants’ engagement display turns and their number of turns in total.

**Table 2. Quantitative measures - Number of turns in total and number of engagement display turns.**

<table>
<thead>
<tr>
<th></th>
<th>Total number of turns</th>
<th>Number of turns with requests</th>
<th>Number of turns with accounts</th>
<th>Number of turns with formulations</th>
<th>Number of turns with metacomments</th>
<th>Total number of engagement display turns</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kate</td>
<td>73</td>
<td>11 (15.1)</td>
<td>14 (19.2)</td>
<td>11 (15.1)</td>
<td>8 (11.0)</td>
<td>44 (60.3)</td>
</tr>
<tr>
<td>Roman</td>
<td>128</td>
<td>24 (18.8)</td>
<td>5 (3.9)</td>
<td>4 (3.1)</td>
<td>43 (33.6)</td>
<td>76 (59.4)</td>
</tr>
<tr>
<td>Iris</td>
<td>79</td>
<td>20 (25.3)</td>
<td>7 (8.9)</td>
<td>6 (7.6)</td>
<td>12 (15.2)</td>
<td>45 (57)</td>
</tr>
<tr>
<td>Geri</td>
<td>28</td>
<td>6 (21.4)</td>
<td>2 (7.1)</td>
<td>1 (3.6)</td>
<td>6 (21.4)</td>
<td>15 (53.6)</td>
</tr>
<tr>
<td>Judi</td>
<td>53</td>
<td>8 (15.1)</td>
<td>8 (15.1)</td>
<td>3 (5.7)</td>
<td>4 (7.5)</td>
<td>23 (43.4)</td>
</tr>
<tr>
<td>Joan</td>
<td>47</td>
<td>12 (25.5)</td>
<td>0</td>
<td>1 (2.1)</td>
<td>7 (14.9)</td>
<td>20 (42.6)</td>
</tr>
<tr>
<td>Simon</td>
<td>80</td>
<td>11 (13.8)</td>
<td>4 (5)</td>
<td>3 (3.8)</td>
<td>11 (13.8)</td>
<td>29 (36.3)</td>
</tr>
<tr>
<td>Roger</td>
<td>45</td>
<td>4 (8.9)</td>
<td>0</td>
<td>1 (2.2)</td>
<td>4 (8.9)</td>
<td>9 (20)</td>
</tr>
<tr>
<td>Total</td>
<td>533</td>
<td>96 (18)</td>
<td>40 (7.5)</td>
<td>30 (5.6)</td>
<td>95 (17.8)</td>
<td>261 (48.9)</td>
</tr>
</tbody>
</table>

**Requests**

Seen across all identified sequences, the most frequently occurring type of engagement display by the participants living with dementia was that of requesting information (see Table 2). The primary characteristic of this engagement display was that the participants sought information from their communication partner as a means to continue with the local project at hand. That is when a participant living with dementia was unable to perform a required action on the tablet computer, whether this action was requested by the formal caregiver or instigated by the participant him/herself, he or she requested further information about how to proceed with the project. In this process the participant, often implicitly, displayed his/her understanding of the ongoing activity.

In the following, an example of how a participant living with dementia requests additional information from her communication partner is presented (see Excerpt 1). The excerpt is of
Joan who is solving a crossword puzzle on the tablet computer together with the formal caregiver Mary. When the excerpt starts, Joan had just typed an incorrect letter in the crossword grid.

Excerpt 1. Requesting information about conduct.

As Excerpt 1 shows, Joan initiates the local project of deleting the incorrect letter (line 1) by pointing to the specific letter and thereby drawing the attention of her communication partner to the trouble source. Joan subsequently explicates what information she needs in order to proceed by producing a request (line 2), thus projecting a response of appropriate conduct in the next turn. Accordingly, Mary’s response (line 3-4) furnishes Joan’s request by providing the information needed to proceed with the local project (i.e. Joan needs to locate the backspace key). Through her engagement display, Joan is able to attain sufficient information from her communication partner to complete the local project of deleting the incorrect letter (line 5-6) and continue with the overarching joint activity.

Apart from seeking information about how to perform specific actions on the tablet computer, another common phenomenon adherent to this category was that the participants living with dementia requested information regarding the possibilities of the device. The excerpt below serves to illustrate this (see Excerpt 2). Prior to the start of this sequence, Roman and the
formal caregiver Mary had been using the maps application to look at the surroundings of Roman’s birthtown Birch Valley (pseudonym).

Excerpt 2. Requesting information about possibilities.

As can be seen at the very beginning of Excerpt 2 (line 1-2), Mary proposes a future endeavor for herself and Roman. In conversation, the making of arrangements for future joint activities is often occasioned at the end of an ongoing episode of interaction, consequently warranting
closure (Ekberg & LeCouteur, 2014; Schegloff & Sacks, 1973). However, rather than orienting to the closure of their joint activity, Roman draws on Mary's proposal of future endeavor and requests information about the possibilities of the tablet computer (line 4). Subsequently, after receiving confirmation on the possibilities from his communication partner (lines 5 and 7), Roman is seen re-instigating the future joint activity as an immediate joint project (line 8). As their activity progresses, Roman is repeatedly displaying his engagement through requests for confirmation (lines 12 and 25). Thus, by seeking information about the possibilities of the device and requesting information about adequate conduct, Roman is making his engagement in the joint activity visible to his communication partner and is consequently able to pursue a local project of clear value to him.

**Accounts**

Another engagement display commonly used by the participants living with dementia, apart from Roger and Joan and with great individual variability (see Table 2), was that of providing accounts. In our data, the production of accounts invariably occurred in close relation to an unexpected response or a non-response from the tablet computer following a participant's physical conduct on the screen. That is, the participants living with dementia produced accounts to justify or rationalize their own apparent failure in managing the tablet computer.

A first example of this engagement display is presented below (see Excerpt 3). In this sequence Kate, a participant living with dementia, and the formal caregiver Julia are using the application CIRCA, a multimedia reminiscence and conversation aid (Alm et al., 2004; Ferm, Ekström, Larsson & Samuelsson, 2020).
Excerpt 3. Holding the device accountable for non-response.

After being provided with the available categories (line 1-3), Kate is seen selecting the topic of sports by pressing on the word (line 4). Notably, Kate performs this action without any prior explicit instruction from Julia. However, the application does not respond to Kate's conduct. In the following turn (line 6), Julia produces a directive, this time accompanied with the verbal prompt "press". Subsequently, Kate presses the topic two more times, even shifting hands to do so, without any response from the device. In producing the account "it does not want to" (line 9), Kate justifies her own conduct and orients towards the device or application as being accountable for the trouble. Rather than responding to the preceding turn with yet another elaborate directive for Kate, Julia is seen performing the required action and thereby allowing the progression of their joint activity.

In our data, the most common type of accounts were similar to the example presented above. That is, the participant living with dementia held the device accountable for not responding to his/her conduct. However, we also identified cases in which the participant living with dementia acknowledges his/her error and further provides an account of why it occurred, with
the nature of the account being either a lack of knowledge or forgetfulness. An example of this is given in the following excerpt where Becca, a formal caregiver, is using the CIRCA application together with Judi (see Excerpt 4).


Before the start of this sequence, Becca and Judi had agreed on watching media related to sports. Similar to what was seen in Excerpt 3, the formal caregiver calls for the participant living with dementia to carry out the local project of pressing the category (line 4-5), again by providing explicit instructions. As Judi fails to do so (line 6), her conduct is repaired by Becca in the following turn. In line 8, Judi acknowledges the error and subsequently accounts for this with "I don't remember anything" (line 10).

Much like the engagement display of requesting information, accounting for errors emphasizes the active and engaged role that the participants living with dementia play in activities of novel learning. By acknowledging the occurrence of trouble and making their understanding of their apparent mistake visible to their communication partner, they solicit
the help needed to complete the current joint project and progress with the joint activity at large.

Formulations

In our data we found that it is first and foremost the participants living with dementia who produce formulations of the formal staffs' prior conduct and thus display their engagement and understanding of what is going on. In a first example of this engagement display, a participant living with dementia, Simon, is looking through photographs on the CIRCA application together with Suni, a formal caregiver (see Excerpt 5).

01 Suni: you can browse images.
02 Simon: ((taps on the physical home button, no response from iPad))
03 Suni: not that button? ((points to an arrow symbol at the right hand side of the image)) you have another one beside there
04 Simon: ((points to the arrow symbol)) there
05 Suni: m:
06 Simon: ((presses on the symbol and drags his finger downwards, resulting in the image scrolling upwards)) oh, ((lifts his finger from the screen and the image returns))
07 Suni: you can scroll like this ((swipes her finger from right to left across the table)) [then you go towards me
08 Simon: [oh ((swipes his finger across the screen and a new picture appears)) so one needs to
09 drag [it away then
10 Suni: [exa:ctly (1.5) good who is on the picture?]

Excerpt 5. Formulation of prior conduct.

In lines 3-4, Suni initiates a repair sequence of Simon's conduct in the preceding turn with "not that button" and then draws his attention to the adequate part of the screen by pointing. After requesting and receiving confirmation about where to press (line 5-6), Simon repairs his earlier conduct by pressing on the correct portion of the screen (line 7-9). However, as Simon
still does not manage to complete the local project of changing the picture, Suni initiates yet another repair sequence (line 10-11). This time Suni suggests another strategy of scrolling and further provides an embodied prompt of how to do so by swiping her index finger across the table. Simon subsequently displays his understanding of, and engagement in, the local project, in part by performing the conduct in a correct manner, and in part by formulating the gist of Suni's prior turn with "oh so one needs to drag it away then" (line 12-14). The local project is completed by Suni's affirmation of Simon's displayed understanding and the activity progresses with talk about the new photograph (line 15).

Another example of how the participants living with dementia display their engagement and understanding in the ongoing activity through formulations is given in the following excerpt of Iris and Sabah (see Excerpt 6). When this excerpt starts, the participants had been using the notes application and Sabah, the formal caregiver, is initiating the local project of returning to the home screen. In this example, special interest is on the embodied conduct of Iris, the participant living with dementia, in producing the formulation.

```
01 Sabah: should we (.) go back.
02 Iris: yea
03 (2.1)
04 Iris: do you [get ba-
05 Sabah:  ([presses the physical home button and the
06 application closes]) m:: (0.5) just press on the green
07 Iris: ah:: then you go= ((does an arched backward motion with
08 her palm above the screen))
09 Sabah: =yea yea=
10 Iris: =backwards.
11 Sabah: m: ((nods her head))
12 Iris: photo album? ((selects a new application from the home screen))
```

*Excerpt 6. Formulation with iconic gesture.*
In overlap with Iris's turn (line 4), Sabah (line 5-6) is seen carrying out the local project of returning to the home screen and in the same turn verbally responding to Iris's request for information with "just press on the green" (the physical home button is marked with a green sticker for reasons of visibility). In lines 7 and 10, Iris displays her understanding of Sabah's conduct and the practical function of the physical home button through her iconic gesture and verbal formulation of Sabah's prior turn. As in Excerpt 5, the formulation is affirmed by the formal caregiver (lines 9 and 11).

From the excerpts above it is clear that the participants living with dementia used the engagement display of formulations to claim new understanding of an ongoing joint project. Further, their formulations were treated as qualified in the responses of the formal caregivers, indicating an acknowledgement of competent participation.

**Metacommments**

In the present study, the production of metacommments, or reflexive speech, was commonly seen amongst all participants living with dementia. Following requests for information, the use of metacommments was the most frequently observed engagement display (see Table 2). Drawing on the work of Ochs and Kremer-Sadlik (2015), our notion of metacommments is a speaker’s contribution to the ongoing discourse in which he/she orients, cognitively or affectively, to the joint activity at large.

The following example (see Excerpt 7) was captured at the very last minute of the participants' joint activity as the first author (Auth) returned to the room in order to turn off the cameras. Julia and Kate had not been seen discussing learning earlier in this recording, nor had learning been an outspoken aim in the instructions for participation.
Excerpt 7. Orienting towards learning through metacommments.

With the metacomment "it will probably take some time before I can master this" (line 3-4), Kate is seen launching learning as a conversational topic as she orients to the presumed temporal trajectory in mastering the tablet computer. Implicitly, Kate is positioning herself as a novice in the ongoing activity which, in the following turn, Julia not only affirms but explicitly legitimizes through "that is the point we've got tons of time" (line 5). Moreover, in lines 8 and 10, Julia could be seen possibly mitigating Kate's initial claim by affiliating with her as also being a novice in the activity. In this sequence, Kate's metacomment does not seem to be responding to any specific prior interactional moment or turn, but rather to the activity at large. While Kate, through her metacomment, positions herself as a novice she also makes her perceived capabilities to learn, given enough time, public to her communicative partners.

In some cases, the participants living with dementia also displayed their engagement in the ongoing activity through metacommments of a more evaluative manner, including assessments and affective expressions. An example of this is provided in the following (see Excerpt 8). Here, Roman and Zala, a formal caregiver, are seen using the maps application.
As seen in this excerpt, Roman’s first metacomment (line 4-5) is evaluative in its characteristics. Through this engagement display, Roman clearly expresses his enthusiasm for the device. In line 14 Roman produces yet another metacomment, this time explicitly orienting to learnability. Similar to what was illustrated in Excerpt 7, Roman’s metacommments do not seem to relate to any specific prior turn of the unfolding project, thus far, but rather to the activity at large.

Unlike the other identified engagement displays, the use of metacommments in our data was characterized by a momentary shift in the participants’ communicative labor. In producing a metacomment, the participant living with dementia exercised interactional control for the formal caregiver to follow rather than the other way around which was typically the case.
Discussion

In a previous study we have shown that people living with dementia are capable of novel learning even without structured interventions (Ingebrand et al., 2020). Drawing on these results, in the present study we aim to explore how people living with dementia in residential care facilities position and assert themselves as active and engaged learners in novel activities. The results from the present study clearly show that the participants living with dementia are actively engaged in the learning process, and that they use a wide range of engagement displays to make their active undertaking in the activity of managing a tablet computer public to their communication partner. Our findings suggest that the participants living with dementia: (i) actively solicited information and assistance needed to progress within the activities, (ii) verbalized newfound understandings of how to manage the tablet computers, and (iii) asserted interactional agency and expressed their capabilities as learners in the activities.

Soliciting information and assistance

In situations when the ongoing activity came to a halt due to a required action outside the limits of the participants' expertise, they commonly requested information from the formal caregiver on how to proceed. By doing this, the participants living with dementia expressed a desire of wanting to know how to advance in the activity, they further displayed competence in knowing where to find this information and were ultimately able to perform the required action. Also, in requesting information about the possibilities of the device, the participants living with dementia displayed their interest in the ongoing activity and further exerted interactional agency (Isaac & Hamilton, 2019) in influencing the ensuing interaction to meet this interest. While requesting information from a communication partner might typically be
seen as a display of incompetence, we argue the opposite. Indeed, by producing requests the participants living with dementia demonstrated interactional competence in securing the information they perceived to be necessary in order to continue with the ongoing activity.

Our results further stressed how the participants living with dementia perceived and positioned themselves as accountable members in the ongoing activities by taking responsibility for their actions in the light of an apparent mistake. By producing an account, thus justifying or rationalizing one's prior conduct, the participant living with dementia displayed an awareness of not meeting the expected outcome of the local joint project. Whether the participants living with dementia held themselves or the device responsible for not managing to complete a local project at hand, their engagement display allowed them to solicit the assistance needed to proceed from their communication partner.

**Verbalizing newfound understandings**

Apart from engaging in soliciting information from their communication partners, we discovered how the participants living with dementia themselves verbalized conduct of perceived importance. Through formulations of both their own and the formal caregivers' conduct, the participants living with dementia thus explicated their understanding of their current undertaking. The fact that the formal caregivers treated the participants' contributions as competent was evident in their subsequent affirmations. In our data, we found no instances in where a formulation produced by a participant living with dementia was challenged or contradicted by the formal caregiver.

**Expressing capabilities to learn**

That the participants living with dementia perceived themselves as learners in the novel activity was perhaps most evident in their use of metacommments. By introducing learning as a
conversational topic, noticeably detached from any specific prior interactional moment, the participants living with dementia clearly exercised interactional agency and further positioned themselves as novices in the activity. While the participants living with dementia positioned themselves as novices in the activity, they also expressed a capability to excel given enough time and practice.

Conclusions

As is clearly observable in Table 2, the participants in our study varied somewhat in what type of engagement displays they most frequently used, as well as in their total proportion of engagement display turns. While the individual discrepancy amongst the participants is prominent, we argue that an even more central finding from our data is that all of the enrolled residents indeed were engaged and active in their participation. Seen across all identified sequences, we found no instance in which a trouble occurred and the participant living with dementia withdrew from action or sat a passive bystander in favor of the formal caregiver.

In conclusion, we suggest that learning is not something passively obtained for people living with dementia but instead actively acquired through their continuous engagement in, and publicly displayed sense-making of, ongoing joint activities.

Implications

From this study, three important implications for practitioners and future research can be drawn. A first implication regards the introduction of touchscreen technologies in residential care facilities. The present study finds no indications of technophobia in the participants living with dementia. Accordingly, there is no reason for practitioners to assume troubles in introducing modern technologies as a social activity.
Another implication is to raise awareness amongst practitioners about the fact that requests for information or assistance from people living with dementia does not mean that they find the ongoing activity too difficult or unenjoyable. On the contrary, this might be a sign of engagement and a wish to learn more.

A third, and final, implication is of methodological importance. Through the use of interaction analysis and video recordings of naturally occurring interactions, we have demonstrated that it is possible to attain the experiences of people living with dementia without using retrospective interviews.

Limitations

A limitation with the present study is that the data was collected during a period of only four weeks. Consequently, we do not know how, if at all, the engagement displays produced by the participants living with dementia develop over an extended period of time. Accordingly, future studies would benefit from following the enrolled participants over a period of months or by doing follow-up assessments. Another possible limitation has to do with the selection of participants. It could be the case that the individuals living with dementia who agreed to take part in the present study are individuals who already perceive themselves as capable learners. While it is challenging to avoid any potential selection biases, future studies should include a larger number of participants to minimize this risk.

Declaration of Conflicting Interests

The Authors declare that there is no conflict of interest.
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