This article examines some of the ways that young children seek and provide help through social interaction during use of the computer in the home. Although social interaction is considered an important aspect of young children's use of computers, there are still few studies that provide detailed analysis of how young children accomplish that social interaction. Conversation analysis of two young children’s social interactions during help provides descriptions of the methods and resources used by them to mutually accomplish their activity. Discussion of specific ways of helping establishes how talk and interaction between children may contribute to computer use and acquisition of on-screen reading and writing practices.
The social organisation of help during young children’s use of the computer

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This article examines some of the ways that young children seek and provide help through social interaction during use of the computer in the home. Although social interaction is considered an important aspect of young children’s use of computers, there are still few studies that provide detailed analysis of how young children accomplish that social interaction. Conversation analysis of two young children’s social interactions during help provides descriptions of the methods and resources used by them to mutually accomplish their activity. Discussion of specific ways of helping establishes how talk and interaction between children may contribute to computer use and acquisition of on-screen reading and writing practices.

Introduction

Early fears about the effects of computers on young children have increasingly given way to understandings of the numerous benefits of computer use (Smith, 2002; Yelland, 2005). So despite some lingering concerns about the effects of computer use on young children’s health and learning (Cordes & Miller, 2000), it is argued that use of computers and other technologies has important benefits for their social and cognitive development (Plowman & Stephen, 2005, p. 151). An important shift has been from fears of social isolation to the role of technology use in socialisation (Yelland, 2005). Certainly, many social aspects of computer use have been discerned in the home and in pre-school contexts.

Young children’s use of computers provides a “catalyst for positive social interaction” (Clements & Sarama, 2003, p. 4) and social interaction produces positive effects on language development especially “interactional language functions” (Kent & Rakeshaw, 1994). Children acknowledge that they prefer to use the computer with others (Jessen & Holm-Sorensen, 2000; cited in Linderoth, Lantz-Andersson & Lindström, 2002) and are more willing to ask for help from other children (Wartella & Jennings, 2000) rather than adults. Collaborative work between children in education settings can lead to helping and instructing (Clements & Sarama, 2003) although children’s social interactions with peers, and with their teachers, show a diversity of social interactions (Heft & Swaminathan, 2002). Children take more risks when playing with others (Linderoth et al., 2002) but are more likely to ask for help in the home (Plowman, Stephen & McPake, 2010) than at school. Plowman et al. (2005) assert that help provided by young children
in pre-school settings provides limited transferability of skills and knowledge. They note that in
their study young children did not offer other children “explicit help that would enable them to
learn what to do when they encountered such difficulties again. If the more competent child said
anything it tended to be an instruction such as “do this” or “press that” without an explanation”
(p. 150). The researchers argue that pre-school teachers need to provide guided instruction to
enable young children to learn effective use of the computer.

Examinations of young children’s acquisition of social and cultural practices associated with
computers and other digital technologies continue to emphasise social interaction with adults.
Rather less emphasis is given to examining and understandings interactions between children
(Davidson, 2009), particularly those where young children help each other. This article
contributes to understandings of young children’s use of computers in the home through an
examination of the ways young children accomplish help during social interaction. The section
that follows outlines the methodology and introduces concepts central to the analytic method of
conversation analysis. The study is then outlined, including how helping talk was selected as a
focus for interest. The analysis of the young children’s interactions is then presented using
transcripts developed from recordings. Discussion addresses how help was organized during
social interaction and considers some of the methods used to accomplish it. Interaction between
children is found to be an important aspect of computer use in the home.

A perspective on examining young children’s social activity

Ethnomethodology is an approach that seeks to make apparent the order of everyday life or “the
orderliness of any of the innumerable ordinary affairs of the society” (Sharrock, 2001, p. 252).
This is done through the provision of an analytic focus on the problem of order in practice or the
witnessable social order (Livingstone, 2008, p. 124). That is, analysts seek to understand how
people, or members of society, overcome the problem of social order so that human affairs are
recognizable (to members) as “just what they are”. The study of the accomplishment of social
order is then the study of practical reasoning and vice verse (Sharrock, 2001, p. 252). Thus, the
social order can be thought of as a local order that is brought about, or accomplished, by people
during their ordinary or everyday activity. For people and analysts alike, social order is a
“production problem” (Livingstone, 1987, p. 56), although one that is overwhelmingly taken-for-granted.

One approach to describing and explicating the accomplishment of the local order is through the sequential analysis of members’ social interactions (Sacks, 1995). Conversation analysis originated in the work of Harvey Sacks and is interested in “conversation’s organization” (Sharrock, 2001, p. 256). For example, the early work of Sacks and his colleagues (Sacks, Schegloff & Jefferson, 1974) delineated and described the system of turn-taking that is regularly employed in conversation. The methods of conversation analysis are used to describe and explicate the orderly or methodical ways in which people use and co-ordinate talk in interaction (Speer, 2005) to do their social activity. People attend to talk-in-progress to produce talk or utterances which in turn become the source for further analysis and production of talk by others. In other words:

people are ongoingly attentive to the talk and visible conduct of their co-participants ... they rely on each other to make sense of emergent conduct by virtue of what has happened immediately before; that is in light of the sequential context (Pilnick et al., 2009, p. 788)

So, it is the sequential context which is examined in order to establish what is relevant to members during their interactions, and how orientations to relevant aspects have consequences for the mutual updating and on-going maintenance of people’s activity during turn taking in conversation (Schegloff, 2007). Very limited use is made of background information with analysts preferring instead to study what is oriented to and made apparent during courses of interaction between people.

An important organizational device in conversation is the adjacency pair or paired sequence of utterances (Schegloff & Sacks, 1973) wherein the production of one, as a first action in the sequence, requires or occasions the occurrence of a preferred action in the next turn. Questions and answers are an example of these paired turns in talk, as are invitations and acceptances. On the other hand, some analysts examine extended sequences where talk is expanded beyond the adjacency pair (Schegloff, 2007) or where talk encompasses broader activity such as storytelling
and games playing (Sacks, 1995). Psathas (1992) examined one lesson in order to describe and explicate the *ad hoc* accomplishment of just that lesson. In conversation analytic terms, this is referred to as single case analysis (Hutchby & Wooffitt, 1998).

Central to the practices of conversation analysts is the employment of Jefferson notation system (Atkinson & Heritage, 1999) to produce very detailed transcripts. This detail is to allow the analyst to attend to the nuances of talk and non-verbal actions such as pointing because it is these same features of talk that people themselves employ and attend to during interaction. For example, a lengthy silence or gap between utterances may indicate trouble in talk and prompt repair through repetition or clarification. Analysis of transcripts, together with recordings, enables a fine-grained description of methods for organising social interactions. For example, studies have delineated methods young children employ for organizing their activity, encompassing both verbal and non-verbal actions, during disputes (Theobald, 2009), topical talk in family mealtime (Busch, 2009), game playing in a school playground (Butler, 2008) and during a writing lesson (Davidson, 2005).

Methods and perspectives of ethnomethodology and conversation analysis informed the analysis in this article. Specifically, the purpose was to describe the ways in which children oriented to, and produced help through their interactions during the course of computer use. The focus for analysis is the way that help is socially organized through conversation, on a turn-by-turn basis. This focus results in descriptions of the conversational methods that children use to produce help in ways that are recognizable as help and that accomplish help. Help is established as mutual activity that is enabled through talk and interaction.

**The particulars of this study**

Data analysed for the paper comes from a broader study of young children’s acquisition of digital literacies in the home (Davidson, 2009). In that study, recordings were made of young children from four families using the computer. Computer activities recorded included playing computer games, using computer drawing tools, Google searches, watching YouTube clips and searching for information in Wikipedia. This paper focuses on one recording of two young
children’s use of the computer in order to play Reader Rabbit, an edutainment software program (CD-ROM) developed to teach children the so-called basic skills of reading and writing.

The recording was transcribed using Jefferson notation (Atkinson & Heritage, 1999) and analysed from an ethnomethodological perspective using conversation analysis. Analysis involved repeated viewing of the recording, further development of the transcript, selection of some sequences of interaction and then detailed analysis of those. In particular, these were activities that the children oriented to during their use of the computer. Helping was one of these. The young children’s spoken and non-verbal actions were analysed sequentially in order to describe and explicate sequences of help. Two questions were developed and informed the final analysis: How does talk and interaction accomplish help during the young children’s use of the computer? What interactional resources accomplish its organisation?

The analysis that follows considers an extended sequence of interaction that occurred in this family during use of the computer. Kaydie (K) is the child who played the game. She was aged four at the time of the recording. During the course of Kaydie’s activity, she was helped by her sister Hannah (H) who was seven. The children’s mother (M) and baby brother (Callum) were present. The researcher (R) was also present and made the recording. The computer was in a corner of the living area of the home. The children were asked to use the computer as they usually did. The sequences of interest occurred a little over twenty minutes into the recording.

Analysis

Extensive description of helping observed on the recording is provided for the reader through reference to the transcript. Before beginning to read the analysis, it may be useful to refer to the transcription notation system which is listed after the conclusion section of this article.

Initial requests and provision of help

In the first sequence, we see how family members use interaction to seek help and to give it. This entails managing related activities such as who should help and determining what the problem is. Kaydie’s initial request for help (1) establishes the mother as the recipient of the request and as the person who can provide the help needed, although Kaydie doesn’t specifically state what is wrong. The mother’s turn indicates acceptance of the request (thus forms a request-acceptance
adjacency pair) although she then deflects the provision of help to the older child and downgrades it to giving Kaydie “a hand” (4). The mother’s talk thus addresses the older child as able to give the help that her sister requires.

1  K: Mum could ya help me wiv::f .hhh Reader Rabbit?
2  M: yes
3  (0.2)
4  M: or Hannah do you want to go give her a hand (0.2) ↑please
5  while I keep Callum
6  H: hhh [okay
7  M: cos Callum::’s going to try to pull at the tripod otherwise

Although the mother’s utterance is a question tagged with “please” (4), Hannah’s strong out-breath or aspiration (represented by hhh in the transcript) expresses exasperation. It may be that this indicates that she hears that she is being directed to help Kaydie. Although Hannah’s use of ‘okay’ then indicates compliance and potentially marks the end of the interaction, the word is overlapped by further talk from the mother who completes her explanation (7) for not helping Kaydie herself.

Hannah goes over to the computer to begin helping Kaydie. Her movement of the mouse provides help by doing and her talk documents help; Hannah is hearable as complying with her mother’s directive to help even though her mother cannot see the help that is being provided. Hannah first documents a problem with the mouse through commenting on it (9) and shaking the mouse around (10). In line eleven, her utterance indicates that she is considering what action to take since clicking the mouse hasn’t solved the problem. Hannah moves the cursor to another place and then clicks the mouse again (12). Finally, she indicates that the problem is resolved and the program should run. Her announcement in line 13 is indexed to the screen, and problem, with the use of “that”, and the words that follow formulate what should happen next.

8  (3.0)↔(H walks over to computer)
9  H: ((hands on mouse)) loosen up
10 (9.0)↔((H moving and clicking the mouse))
11 H: ↑u::::m
12 (6.0)↔ ((H moves cursor and clicks the mouse))
13 H: that should ↓go up no::w
14 (3.0)↔((H walking away))

Hannah’s final utterance indicates that she has completed the help that her mother’s directive
required because the problem is solved. She immediately walks away thus restricts the possibility of interaction with Kaydie and physically indicates that she has finished helping her sister.

*Extending help*

The analysis next establishes how Hannah provides further help for Kaydie by directing that she make certain actions that are required for her to start playing the game. Although Hannah has walked away, Kaydie continues to talk (15-17). Her utterance makes apparent that she has previous experience of this part of the game ("sometimes"). As well, her talk is indexed or linked to the screen and what is *sometimes* visible through use of the word "there", and through the non-verbal actions of pointing at and touching the screen (16 and 17).

15  K: sometimes there’s a
16  (1.0)↔((points at screen))
17  K: ↑big (0.6) thing on ((touches screen))
18  R: °o::wh°
19  (2.0)↔((image of tree appears))

The researcher’s utterance (18) acknowledges Kaydie’s announcement and indicates that she is attending to Kaydie’s talk. Kaydie still has her hand on the screen when an actual image of a tree appears on the screen (19). It has a door in the trunk, a mat at the foot of the door with ‘welcome’ written on it and a sign above the door. There is also a signpost beside the tree and a swing hanging from a branch.

It is Kaydie’s lack of action when the computer image appears that prompts Hannah’s utterance (20) directing her to start playing. Kaydie complies by taking her hand off the screen and grabbing the mouse (23). Hannah’s use of ‘now’ (20, 24 and 27) is tied to her “reading” of Kaydie’s proposed actions as Kaydie moves the cursor around on the screen. The word ‘now’ is followed by directives (20 and 27) that are indexed to what is happening, or not, on the screen. So, “go Kaydie”, follows Kaydie’s actions where she has taken her hands off the mouse and is pointing to the screen (16-18) and the appearance of the screen image which now allows Kaydie to begin the game by making selections. Symbols in the transcript (>|<) surround parts of her utterances that are said quickly and appear to indicate an urgency.

20  H: now >go Kaydie<
21  C: (  )
Several words indicate that Hannah is perhaps drawing on previous experience of this game. She is able to direct Hannah based on “what happens”. She also appears to know that the welcome mat has to be clicked to begin playing the game (“before you click there”). What is evident is that Kaydie moves the cursor to make a choice – from the mat, and towards the road sign. It is Hannah’s talk that directs her to the tyre swing although no change appears on the screen when Kaydie clicks. Her compliance with the directives suggests that she “hears” them as helping her to play the game.

In the sequence of utterances that follow, Hannah manages a “problem” to do with concluding helping. Her talk indicates her awareness that she can be seen to be no longer helping Kaydie even though her mother has directed that help. Hannah accounts for her actions using assessments based on her knowledge of the game and of Kaydie’s ability to play it. The first assessment (33) is indexed to the initial request through the use of “help”. Assessments in talk occasion or invite agreement (Speer, 2005), however, the researcher’s response does not provide it (“o:::h°). Instead, the response registers the previous turn as contributing to “a change in its recipient from non-knowing to now-knowing” (Schegloff, 2007, p. 118).

The second assessment (36) elaborates on the first and supports the claim that help isn’t needed.
In the third (38), Hannah’s assessment provides a warrant for being able to make these assessments. All the utterances are said softly (indicated in the transcript by ° °), thus are managed as talking about Kaydie rather than as talk that might provide for Kaydie to join in (and possibly comment herself about whether the game is easy or not for her).

\textit{Help reading on-screen}

In the talk that follows, Hannah provides further help despite her previous assessments about the game being easy. Help appears to be prompted when Kaydie stops using the computer and slides down her chair (above 37). Hannah makes a directive that requires Kaydie to click on the image of a welcome mat (40), however it isn’t until several turns later that Kaydie complies with this (52). In-between, she inserts questions that seek further information from Hannah. A question-answer adjacency pair results (42-44) and then Kaydie moves the cursor to the sign above the door (46). Another question-answer pair follows; Kaydie seeks confirmation that she has made the right move and Hannah’s response (49) names the purple mat, instead of the word ‘welcome’ that is written on it. Her use of “yeah” and “there” appears to endorse movements made by Kaydie using the cursor. Hannah confirms the position again (51) and Kaydie then clicks the welcome mat.

\begin{verbatim}
40  H: ↑Kay↓ie click ↑wel↓come
41    (4.8)
42  K: ((sitting up)) where is wel (.↓) come
43    (0.6)
44  H: at the ↓doo:::r
45    (2.0)
46    (2.0)←→((cursor moves to sign over door))
47  K: here?
48    (2.0)
49  the purple mat ↑yeah ↓there
50    (3.0)←→((cursor moving around))
51  H: °yeah°
52    ((K clicks the mouse))
\end{verbatim}

The talk from line forty to fifty two forms an extended sequence whereby Kaydie complies with Hannah’s directive only after she has sought clarification from Hannah and moved the cursor to a number of positions according to the responses that Hannah provides. The young children’s
interactions show a situated calibration that mutually accomplishes finding the right spot to place the cursor. Talk is used to question, clarify, and confirm and is finely tuned to the movement of the mouse and cursor and to the position of the cursor on the screen (as indicative of the next action to follow).

**Responding to questions and directives in the computer game**

At this point in the computer game, the player is required to provide information before the game can proceed. The computer program provides a request for information (53) and this is followed by numerous non-verbal actions from Kaydie (54, 55, 58 and 60). Auditory responses from the computer (56, 57 and 59) follow Kaydie’s actions and indicate to her that she has not responded in the correct way.

53  C: what’s your name type it in
54  (2.0)↔((K pulls keyboard closer))
55  (7.0)↔((K looking on keyboard))
56  C: ( ) [(an are)
57  [(computer makes sound)]
58  (11.0)↔((K looking at keyboard))
59  ((three computer sounds as K clicks))
60  (3.0)↔((K looking at keyboard))
61  C: what's your name? (0.2) type it in
62  (2.0)↔((K moves cursor and then presses key))
63  C: ‘k’
64  (1.0)
65  K: ‘k’
66  (1.0)↔((K looks at keyboard and presses key))
67  C: ‘a’

The computer then repeats the request and directive (61) which indicates a problem – the player has not yet keyed in a name. Following this, Kaydie moves the cursor to the textbox and keys in the first letter of her name (62). The computer responds by naming the letter that appears on the screen (63). This action-confirmation sequence is then repeated for the next letter (66 and 67).

The provision of auditory information is clearly designed as an educational aspect of the software so that young children will learn the names of the letters that they key in. However, the human-computer interaction (Luff, 1990) shows the complexity of using the computer to play this simple game; Kaydie’s uncertainty about the spelling of her name complicates for her the
activity of keying in the information.

Directing further help

In the interaction that follows, the mother again makes Hannah accountable for the provision of help in place of her. It begins with a summons from Kaydie and a request for confirmation (68). The mother’s response is to summons Hannah (71), rather than to reply directly to Kaydie. She then directs that Hannah help her sister (73). Her talk indicates that she takes Kaydie’s question as requesting help at the computer, rather than a question requiring verbal confirmation. The mother goes on to provide an explanation (76-77); in not providing help herself she is taking account of the presence of the researcher’s recording equipment and of the need to carry her baby past it to get to the computer.

68  (2.0)
69  (2.0)
70  (1.0)
71  M: Hannah
72  H: yeah=
73  M: =][would you go and help her please
74  ][((K turns back to the computer))
75  C: ‘y’
76  M: cos if I go over there Callum will wanna help and I’ll pull
down the tripod
77  (0.4)
78  (0.4)
79  M: as I’m going over
80  H: what's a tripod?
81  M: ][the stand for the camera
82  C: ][‘d’
83  M: thank you
84  (3.0)→((K grabs mouse and looks at screen))

Hannah’s response (80) is to seek clarification through the insertion of a question (what's a tripod?) and once her mother responds she apparently moves towards Kaydie as her mother thanks her (83). This response then is the second pair part to a non-verbal physical action by Hannah. During the interaction between the mother and older child, Kaydie has resumed writing her name, successfully keying in the next two letters. The computer program responds to both entries by naming letters (75 and 82).
Help for writing on screen

Hannah’s talk with Kaydie now appears designed (Pomerantz & Fehr, 1997) to take account of her as a young child in need of help. Initially, use of the change-of-state token (Heritage, 1985) marks her simultaneous recognition of error (o::h) and that help is needed and it is immediately followed by a negative evaluation directed at Kaydie (line 86) at the same time as a sound from the computer indicates an error.

85  (1.0) ↔((H beside K and looks at computer screen))
86  H:  o::h Kaydie [no
87  [(computer sound)]
88  (0.2)
89  H:  yeah delete yeah (0.2)↑good ↓girl
90  (0.4)

Hannah then acknowledges an on-screen action of Kaydie’s in response –to move the cursor- by endorsing it (yeah) and naming it (delete) and endorsing that action when Kaydie completes it (yeah). The evaluation of Kaydie as a “good girl” both offers praise to her but again does this in a way that takes account of her as being a young child. Hannah’s articulation of the words involves exaggerated intonation and pitch alteration.

The interaction that follows illustrates the complex organization of talk which accomplishes the spelling of the rest of the name. The transcript shows the naming of letters by the girls (e.g. ‘i’) and the computer’s programmed audible “receipt” of information (e.g. ‘i’) when individual letters are keyed in by Kaydie. Kaydie’s use of “um” appears to account for her “thinking time” as she follows this with the names of two letters (93). She emphasises the second letter (underlining in the transcript representing emphasis, so ‘i’) which indicates that this is the letter to be written next. Hannah’s repetition of the same letters confirms her hearing of ‘i’ as the next letter. Kaydie then says the letters individually (96 and 98) although does not key in ‘i’. Hannah confirms (↑yeah) and she then names the final letter.

91  K:  °um°
92  (0.4)
93  K:  °d’ ‘i°
94  H:  ‘d’ ‘i::’
95  (0.4)
The transcript records the computer’s responses (in lines 101 and 105). These responses are important to record since they also illustrate the finely tuned nature of activity during the children’s use of the computer. For example, their talk does not overlap the response of the computer. As well as naming letters that correctly spell the name being keyed in, the programmed response from the computer confirms that Kaydie has pressed the correct key.

Helping by pre-empting a problem

Help is also accomplished through the provision of information that anticipates problems. So in the following, Hannah’s talk indicates her understanding that what is to come next in the game –writing her birthday- may be difficult for Kaydie. It begins when Hannah walks away and initiates talk with her mother about her sister (“Kaydie”) but then recalls something (“oh”) and returns to Kaydie’s side (107). What follows is an extended turn where Hannah directs that Kaydie remember what is to follow. She then provides a list of directives that relate to the month, the next information that the computer program will require. The list has three actions –press go, click the down button and then look for another button (113, 115 and 117). Hannah doesn’t name the button (117) but “references” her talk about it by pointing to a similar one on the screen (118).
Although the word ‘okay’ can be used in various positions in sequences and for a variety of purposes (Beach, 1995; Schegloff, 2007), Hannah’s use of “okay” (119) appears to indicate the her list has finished. The absence of a response from Kaydie may be because she does not hear Hannah’s previous talk as requiring a response. Hannah then directs Kaydie’s attention to the screen with the formulation “starting” (121).

Help keying in more information

As described earlier in the analysis, the computer program provides audible prompts which are designed to gain certain responses from the player. Although not replicating the features of human conversation in detail, the program does produce simple questions and directives, for example. These work a little like adjacency pairs in that they require that the player fulfil the next action (or pair) that is required. So, in the next sequence the computer provides a greeting and then a question (122 and 124). In between, Hannah acknowledges (‘okay’) that the computer has moved on to the part of the game that her previous talk has anticipated.

122 C:  hi::
123 H:  "okay"
124 C:  when is your birthday?
125 H:  so [click on the down button]
126 C:  [click on the arrows] to find the month
127 then [click on the correct box
128 H:  ["okay"
129 H:  (0.4)
130 C:  to pick the date
131 (0.4)
132 C:  when you are done press the done button
What follows then is a series of directives from the computer program and from Hannah. These overlap (125 and 126, 129 and 128). Hannah’s words vary from the digital responses of the computer; she refers to ‘down button’ and the computer names ‘arrows’. She concludes with ‘okay’ (128). Hannah’s directive (“click it”) endorses that Kaydie has found the correct button after moving the cursor around. Kaydie clicks the button several times (135).

Hannah’s talk continues to take account of her sister as a young child who is being helped to do something that is difficult for her. This is seen here when she produces a known-answer question (136) which seeks Kaydie’s confirmation (137) and then confirms its correctness with the use of the word ‘okay’ (139).

What follows is the insertion of a series of questions by Kaydie that seek further confirmation that her choice is correct (140 and 143). Her questions are said quickly (shown through use of the symbols $>$ $<=$).

Hannah confirms Kaydie’s choice verbally and by pointing at the correct position on the screen. In line one hundred and forty five, Hannah indicates where the cursor needs to be on the screen. She takes her finger away and then confirms Kaydie’s action which was to move the cursor to the spot that Hannah had just indicated (146 and 147). Her following utterance names what has to be done next and reminds Kaydie (149).
148 (1.0)→((K clicks))
149 H: and ↓done
150 ((K clicks))
151 H: ↑good ↓girl
152 C: we're going to have so much fun and there's so:: much
153 for us to do if you
154 ((K clicks))
155 C: let’s play a game

The affirmation that Hannah gives at the end is said with exaggerated intonation and alteration of pitch (↑good ↓girl). This produces an animated tone as Hannah again appears to talk to Kaydie as a young child who has completed something that was difficult.

**Discussion**

Conversation analysis aims to “show the recurring structure and patterns in the organization of conversation” during social interactions (Luff, 1990, p. 2). To this end, the analysis of young children’s help during computer use discerned different ways of helping and described how talk and interaction was organized to accomplish those. In particular, the game involved an occasioned complexity (Davidson, 2010) that resulted when the younger child was required to identify words and symbols or key in information. Those activities were beyond what Kaydie could do alone so talk between the two children enabled her to engage successfully with image and print, and produce written information. In this sense, help was mutually accomplished.

One way of helping was through a directive to perform a specific action (↑Kay↓die click ↑wel↓come). Heap (1992) identified similar talk in his study of two children’s interactions during use of the computer in a classroom writing lesson. Heap referred specifically to a discourse-action sequence designed to “foster the accomplishment of nonverbal acts such as inputting [on a computer]” (1992, p. 130) and contrasts this with actions that are accomplished wholly through conversation. Similarly, Plowman et al (2005) identified the direction of actions by pre-school children during help on the computer, rather than the provision of verbal explanations that might lead to further learning.
In this study of young children’s computer use, we see that directives were not necessarily immediately followed by non-verbal actions such as keying. Instead, several extended sequences (Davidson, 2005) were produced when the younger child sought clarification following a directive from her sister. Sometimes this resulted in fine-grained, or calibrated, negotiation of what was to be done and the interaction produced more complex and lengthy forms of help that were interspersed with movement of the cursor and talk about on-screen activity and images. Directives were also used to provide a list of instruction for how to do something that was to come when Hannah anticipated that Kaydie would experience trouble keying in her birthday. Hannah’s talk also accompanied Kaydie’s use of the mouse, as the young child keyed in the information to complete the task. Not only was this talk more complex than the directive-action sequence might imply, it also required using talk and other action to direct attention to the screen.

One important way of directing attention to the screen was by pointing. Pointing produces meaningful action through a convergence of talk, gaze, movement of the body to point, interaction with something in the environment that is oriented to and interaction with another who is drawn in through pointing (Duranti, 2003). During computer use it was accomplished through finger pointing at or on the screen and pointing using the on-screen cursor. Pointing with a finger was used, for example, to establish what part of the screen was being referred to during talk. On some occasions, pointing with the cursor indicated a potential action by Kaydie and prompted talk from Hannah. The cursor was sometimes used to indicate uncertainty (roving around the screen) or an action-in progress (such as moving towards a specific place on the screen or a particular icon).

The analysis establishes how children and adults attend to talk and non-verbal actions of others, and objects, including how these are embodied in the on-screen activity. Previous studies in conversation analysis have established a phenomenon referred to as the “over-hearing” audience (Heritage, 1985; Sacks, 1995) to encapsulate the ways in which talk may be for an audience such as a jury or for other children during talk between a teacher and individual students in lessons. In the case of helping talk and use of the computer, we might talk about an “over-seeing audience”,

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not only an overhearing one. That is, interaction makes use of and relies upon unstated activity that can be observed, often on the screen. Talk frequently makes sense because it is related to or is about that activity and speakers assume that others have been observing it when they produce their utterances. Over-seeing, and seeing itself, was thus “socially organised” (Goodwin & Goodwin, 1996) and was necessary for the production of helping talk during use of the computer.

Conclusion
This article has established some of the ways that talk and interaction accomplished help during young children’s computer use, specifically through talk about the technology and talk about on-screen texts and activity. The young children competently used a range of interactional resources to seek and gain help and to provide and use it. Non-verbal action was particularly important as gestures indexed talk to on-screen activity and talk relied upon others orienting to and seeing on-screen activity, even when that activity wasn’t the focus for talk between the children or with their mother. The technology itself was integral to the interaction that occurred, both generating talk and as the focus of talk and activity. The help provided showed that interaction between children can be an important aspect of computer use in the home including when computer practices require reading and writing on-screen.

Transcription symbols

[[ Utterances that begin at the same time
[ Overlap in speakers’ talk
] Indicates point where simultaneous talk finishes
= Talk between speakers that latches or follows without a break between
( ) Used to indicate length of silences, pauses and gaps e.g. (0.2)
(.) Indicates micro intervals
::: Indicates that a prior sound is prolonged e.g. li::ke
- Word is cut off e.g. ta-
>< Talk enclosed within symbols is said at a faster pace than surrounding talk
? Rising intonation
Rising intonation that is weaker than ?
Marked rising intonation
Marked falling intonation
An animated tone
Emphasis with capitals indicating greater emphasis e.g. NO
Emphasis and prolongation indicate pitch change e.g. stra::p indicates stress on word but no change in pitch; stra::p pitch rise
Upper case indicates loudness
Indicates softness e.g. It’s a ° secret °
Indicates aspiration or strong out-breath
Indicates that word within parentheses is uncertain
Empty parentheses indicate that word/s could not be worked out
These are used to indicate verbal descriptions e.g. ((sits down))
Indicates that a letter of the alphabet has been named
Indicates action occurring during gap in talk e.g. (3.0)→((watching screen))
(adapted from Atkinson and Heritage, 1999)

References


