The interactional achievement of reading aloud by young children and parents during digital technology use

Christina Davidson iD
Charles Sturt University, Australia

Susan Danby and Stuart Ekberg
Queensland University of Technology, Australia

Karen Thorpe
The University of Queensland, Australia

Abstract

Many studies that examine parent–child interactions while reading digital texts focus on the reading of e-books. Rather less is known about parent–child interactions and reading aloud of other screen texts that occur during young children's everyday use of digital technologies at home. This article presents the findings from a conversation analytic study of a collection of 36 sequences of interaction between young children and their parents where the words 'says' or 'say' were used to refer to print on the screen. The collection involved interactions between seven parent–child dyads. Sequences were identified through repeated viewing of 29 hours of video-recordings made by parents. Analysis enabled systematic identification and description of two distinctive practices in talk that led to reading aloud from the screen. Reading aloud of the text was provided by either a speaker using a preface, such as 'it says', or solicited using a question. Discussion establishes how young children and their parents orient to and produce reading aloud practices, how reading aloud meets the instrumental purposes of children and the ways that young children competently enable reading aloud. It is concluded that reading aloud from the screen is an important information source for young children, enabled through parent–child interactions.

Corresponding author:
Christina Davidson, School of Education, Faculty of Education, Charles Sturt University, NSW, Australia.
Email: cdavidson@csu.edu.au

Introduction

Young children are increasingly using, and being exposed to, digital technologies in homes across the Western world (Danby and Davidson, 2019; Johnson, 2010; McPake et al., 2013; Rideout, 2011). Hence, there is growing interest in young children's acquisition and learning of literacy related to digital technologies (Levy, 2009; Miller and Warschauer, 2014; Neumann et al., 2013). This article addresses one aspect that has been under-investigated – interactions between parents and young children that produce spontaneous reading aloud from the screen during everyday digital technology use.

Parent–child interactions related to reading digital texts has been most evidently addressed in examinations of the shared reading of children's e-books at home (e.g. De Jong and Bus, 2002; Shamir and Korat, 2007, 2008; Smith, 2001). The shared reading of e-books is an increasingly prevalent home practice (Dore et al., 2018; Miller and Warschauer, 2014) that requires the careful selection of e-books (Hoffman and Paciga, 2014; Roskos et al., 2009) and 'meaningful interactions around texts' (Hoffman and Paciga, 2014: 379). Although the design of e-books encompasses the provision of narrated texts that replaces the need for an adult reader, the importance of 'adult mediation through language interactions' (Hoffman and Paciga, 2014: 383) cannot be overlooked in relation to young children's language and literacy development. Overwhelmingly, young children's reading continues to be an activity that is shared with adults.

Studies of interaction during the shared reading of e-books build on related work in the field of print literacy. That research establishes the importance of interactions around storybook reading and delineates actual features of talk such as questioning (Anderson et al., 2012), print referencing by parents (Han and Neuharth-Pritchett, 2014) and responses to print referencing by children (Justice et al., 2002). Studies frequently employ comparison between parent–child interactions with traditional print-based texts and e-books (Dore et al., 2018) to determine how talk is influenced by differing media use and to draw conclusions about the effectiveness of e-books.

Kim and Anderson (2008) examined the interactions between a Korean mother and her two children while reading a traditional book and two e-books. The findings included the greatest number of interactions occurring

while reading print text. Further, interaction varied with e-books depending on the differences between the two texts that were used. Differences were found in children's questioning, with questions tending to occur at the end of the e-book but within the shared reading of the print text. In a comparison of interactions during print and e-book readings, Korat and Or (2010) examined 48 interactions between kindergarten children and their mothers. One finding was that young children initiated more talk and were more responsive to their mother's talk during e-book reading. Interactions during the shared reading of print texts, on the other hand, showed more initiations and more responses by mothers (Korat and Or, 2010). Both studies similarly note the importance of the context for reading, since 'different reading contexts influence adult–child interactions' (Korat and Or, 2010: 139), although there are relatively few studies overall that examine these (Kim and Anderson, 2008).

Young children at home now engage with a diverse range of digital texts (Levy, 2009) and learn to make meaning of symbols and images (Danby et al., 2013; Levy, 2009). We also know that parents interact with children during their own technology use, e.g. reading out text messages to them (Arrow and Finch, 2013), and that young children access help from their parents when engaged with digital technology (Stephen et al., 2013; Wolfe and Flewitt, 2010). Strouse and Ganea (2017: 131), on the other hand, suggest that 'screens are likely experienced less for reading' than for other activities that children engage with, such as entertainment. Parents may not necessarily take advantage of the distinctive features of digital texts that their young children encounter (McNab and Fielding-Barnsley, 2014).

Overall, though, there is an absence of empirical studies that specifically address and systematically examine parent–child interactions that produce reading aloud, as it occurs during young children's everyday activity with digital technologies. This absence highlights yet again the relative inattention paid to the practices of young children with digital technology at home (Burnett, 2010; Danby and Davidson, 2019; Lankshear and Knobel, 2003) and to what might be learned about reading from a screen through a close focus on interactions that occur between parents and their children during their everyday activity.

In previous work, we considered young children's digital practices during interactions with others (Danby et al., 2015, 2016; Davidson, 2009, 2012; Davidson et al., 2016, 2017). The purpose of this article is to focus more specifically on the interactions that produce reading aloud during young children's everyday use of digital technologies at home. We draw on our analysis of a collection of 36 sequences of parent–child interactions to address the

question: How do parents and young children interact to produce reading aloud from the screen? Conversation analysis of sequences enabled us to delineate two distinctive interaction practices employed by young children and parents to make reading of letters, words and more extended texts relevant. Either a speaker used a preface such as 'it says' before reading from the screen or a reading was solicited using a question. We consider five examples drawn from the collection to illustrate these interactional practices. Our discussion of these practices establishes (1) orientations of young children and their parents to reading aloud, (2) how reading aloud fulfils instrumental purposes and (3) the ways in which young children's interactional competence enables reading aloud to occur. We conclude that reading aloud from the screen is an important information source that is enabled through parent–child interactions during the in situ accomplishment of activities that young children like to undertake.

Perspectives of ethnomethodology and conversation analysis

In this study, we employ a conversation analytic approach that is firmly located in ethnomethodological perspectives. Ethnomethodology is the study of people's 'practical actions and reasoning' (Hester and Francis, 1997: 97) and these actions are regarded as situated accomplishments (Garfinkel, 1967; Sacks, 1995). Language is central to the situated production of actions and reasoning (Lee, 1991), since it is through language that individuals provide accounts for others of what they take to be going on, are doing and so on. Language 'documents' underlying, shared assumptions and understandings and brings about the social order. The social order is regarded as a local interactional order and language is central to its production.

In early ethnomethodological studies of reading, Heap (1985, 1991) argued that examining reading in situ establishes what counts as reading in specific or particular situations. He formulated reading as a 'family of context-embedded activities' (Heap, 1991). On the basis of this understanding, Heap argued that individual instances of reading have their own rationale or 'local rationality' such that reading is considered to be right (or not) for those situations. In applying his situated perspective to the matter of learning to read, Heap emphasises the importance of the initial experiences of 'other persons reading' (1991: 128) on particular occasions. In attending to reading, the learner learns about the various purposes of reading and about reading differing texts. Heap's perspective informed a number of influential studies of how children learn to read through formal instruction (see Baker and

Freebody, 1993; Freebody, 2013; Freebody and Freiberg, 2001; Heap, 1985, 1991, 2005). Primarily, this body of work establishes understandings of reading in educational contexts as cultural and situated activity that is practically accomplished through interactions between students and their teachers.

Described as 'ethnomethodology's most successful off-shoot' (ten Have, 2002), conversation analysis developed from the work of Harvey Sacks and colleagues (Sacks et al., 1974; Schegloff et al., 1977). Core to this work is the understanding that a turn at talk instantiates some action usually in relation to a previous turn at talk (unless it is the opening utterance in an interactional encounter). So a turn responds to a previous turn – or action – and itself provides an action that in turn creates an environment in which a following turn will respond, and so on. As Clift notes, 'sequential positioning – the placement of a turn after something (including, of course, as we shall see, silence) – is seen to be a crucial resource for participants in making sense of what is said' (2005: 1645). Sequential organization of activity is also the focus for analysts.

An important analytic technique within conversation analysis is analysis of a collection (Sidnell, 2013). Collections often begin with noticing, or the analysis of a single episode, that discerns an interactional phenomenon of interest. A collection is then formed that encompasses all examples of the phenomenon from an overarching data set. The collection is then subject to detailed analysis to develop a description of the phenomenon and its 'generic, underlying practices' (Sidnell, 2013: 89). The description must take account of all sequences in the collection. In this way, the description is regarded as robust. The analysis in this article is of a collection.

Method

This paper draws from a larger study of young children's Web searching in homes and preschools. In Australia, preschool refers to early childhood education settings that young children attend prior to beginning formal schooling. The study was funded by the Australian Research Council and received ethical clearance from the two universities involved in the project and from the Creche and Kindergarten Association that participated in the study. Informed consent was sought and obtained from all participants in the study, including educators in preschools, parents and parents for their children. The study included a survey of preschool educators and analyses of video-recordings from 15 homes. The survey data encompassing 131 educators have been

reported elsewhere (Thorpe et al., 2015). The findings in this paper draw on the data set of all video recordings made in homes.

Video recordings in homes were made by parents of young children who were aged between $3^1/_2$ and under 5 years of age. Parents and children had been invited to participate in the study after consultation between researchers and early childhood educators at nine preschools. Children were chosen based on their comfort level with digital technologies and their interest and expertise in undertaking Web searches.

Parents were given video cameras and asked to set these up at home so that recordings captured their child interacting with digital technology. Recordings were made in each home over one week and parents were asked to record their child's everyday, or usual activity with digital technology. Recordings captured young children's use of digital technologies and their interactions with others while doing this. The number of recordings made by parents varied from home to home, as did the length of recording. The longest single session lasted over 80 minutes. Recordings captured numerous digital activities across the homes, including Web searching, game playing, use of the phonics program Reading Eggs, viewing YouTube clips and listening to music. In total, there were 29 hours of recorded activity in the data set. These recordings frequently included other family members, including parents, who interacted with young children during their activity with digital technologies.

Recordings were viewed many times and some sequences subjected to single episode analysis. The collection arose from one single episode where we observed a father ask the question 'What does it say?' and then his young son read aloud from the screen. After noticing this interaction, we decided to conduct an analysis of a collection. We examined all video recordings in the home data set to identify utterances by a parent or young child containing the words 'says' or 'say' produced in reference to print on the screen. The interactional sequence of each was determined (i.e. the course of talk that led to the use of the words and what followed them) and a short video clip was developed for ease of access during analysis.

The collection consists of 36 sequences with 7 of the 15 children contributing to talk in at least one sequence. Each sequence was transcribed using Jefferson's transcript notation (Atkinson and Heritage, 1999). Jeffersonian notation is integral to conversation analysis because it can be used to encode the finer features of talk in interaction, such as intonation and loudness (see Appendix 1). Pseudonyms were used for all participants' names. Screen shots of some non-verbal actions that led to, or accompanied, reading were also included in the transcripts where these occurred in tandem with the

interactional resources that were our focus in the analysis. In particular, analysis early on showed that pointing was relevant.

All sequences were examined by us, working between video recordings and transcripts to determine the types of turns that produced reading aloud. The analysis led to descriptions of specific interactional practices that produced reading aloud in individual instances, or sequences, and at the same time were evident across the entire collection. According to the perspective of conversation analysis, this approach may be understood as seeking to describe specific methods that produce and are located in specific contexts (context dependent) and as seeking to describe methods that appear independently of specific contexts (or are context free) (Schegloff, 2007). Thus, in the analysis that follows, we examine selected examples of the local use of referring to texts by parents and children, but draw out the description of two practices that were evident in numerous interactions in the data set.

Results

Conversation analysis of the sequences in the collection established distinctive features of two types of turns in talk that were regularly followed by, or included, reading aloud from the screen. Children and parents produced these turns. We first examine sequences that illustrate how reading aloud was introduced by a speaker using a preface followed by an actual reading of the text on the screen. Next, we consider sequences that illustrate how a question turn was used to solicit reading by another. Finally, we examine an extended sequence where both types of turns were produced. Analysis of the extended sequence establishes further how the two types of turns are resources that may be drawn upon equally to produce reading that informs the course of some broader activity. At this point, readers unfamiliar with the Jefferson notation system will find it helpful to read Appendix 1 prior to considering the detailed transcripts and analysis.

Reading by a current speaker

In Example 1, Ashton (almost four years of age) conducted a Google search with the help of his mother. The recordings of his digital activity show that he often conducted searches with the help of his mother or father. On this occasion, he told his mother that he wanted to find out about volcanoes. She had written the word 'volcanoes' on a piece of paper and Ashton keyed the word into the computer. Once Ashton completed this, a list of search results appeared on the computer screen. The interactional phenomenon of interest occurs in line 9.

Example 1 (Ashton 00003 03.08)

```
1           (0.4)
2     M:    well (0.2)if we go [down
3                            [((A looks at screen))
4           ((M puts hand on mouse))
5           ((M scrolls down list of suggested
6           search terms))
7     M:    there's one here
8           (0.4)
9→    M:    an' it says volcanoes for [kids
10                                    [((M clicks mouse))
11          ((selected webpage appearing))
12    A:    a:::h=
13    M:    =°okay?°
14    A:    a[aah::
15           [((M takes hand off mouse))
16          ((A leans closer to screen))
17    A:    aaah:: (0.2) eheheh
18    M:    no::w (0.4) you can pick one to click
19          (0.2)↔((A looks towards mouse))
20          ((A puts hand on mouse))
```

The Web search results produced options. Ashton's mother uses the mouse and her talk draws Ashton's attention to one of these. Her use of 'well' indicates some next talk – action – to come (2). She then proceeds to pose a candidate action ('if we go down'), followed immediately by taking control of the mouse and moving the cursor down the screen (5–6). Her noticing draws Ashton's attention to one item on the list (7) and she follows this with the turn that provides reading aloud (9). This turn audibly extends her previous talk through the use of 'and' in turn-initial position, provides the preface 'it says' and then reading aloud from the screen. As she reaches the final word ('kids'), the mother clicks on the title that she has just read aloud (9). Ashton's mother seeks agreement with her choice from Ashton ('okay') and she takes her hand off the mouse as Ashton leans in closer to the screen (16). Ashton produces a number of vocalizations as he continues to look at the screen (17). These provide an appreciation of what is visible on the screen. The mother then informs Ashton of a possible next action (18; selection of one from the screen). Ashton moves his hand to the mouse (20), thus indicating that he takes his mother's previous comment to mean that she is now handing the choice of what to do over to him.

So, the mother's production of reading aloud occurs within a collaborative course of talk and actions between her and her son. In this case, it is reading to enable Ashton to complete his activity of finding information about volcanoes. The mother provides information to Ashton and works to explain why picking a specific title might be a logical thing to do. In this way, his mother indicates that her selection has taken account of Ashton and seeks his endorsement that he agrees with her proposed course of action. The mother's talk also provides a reason for Ashton to consider the on-screen information as relevant to him.

In Example 2, the phenomenon occurs in lines 17–18. Henry (aged four and a half) had conducted a Web search, something that he did regularly with the help of his mother or father. On this occasion, his mother was helping and he had told her that he wanted to know how many people there were in the world. The occurrence followed on from the child's identification of the words Sydney and Australia. Henry was looking at information that he had searched for and found. His mother was standing behind him and he spoke to her whilst maintaining his gaze at the screen.

Example 2 (Henry 1418 03.52)
```
1                 (0.8)
2       H:        that's (0.2) Sydney an (0.2)um
3                 um Australia both (0.4) look both
4                 the same
5                 (0.5)
6       M:        [[yea::h
7                 [[((H begins to move nger forward))

8       H:        [[[it loo::ks like a white=
9                 [[((touches screen))
10                =star [there (0.2) and a white=
11                      [((points to another place))
12                =st[ar ((pulls nger away from screen))
13        M:         [yea::h cos Sydney's in Australia
14                (1.0)
15      H:        ↑oh!
16                (0.6)
17→     M:    so >you see< that says (0.4) ↓most
18→               popular city
19                (0.4)
20      M:        that means the city
```

```
21              (0.6)
22    M:        ↑in ↓Australia that has the
23              most peo::ple (.) is Sydney
24              (0.3)
25    M:        it has (0.2)four and a half million people
26              (1.3)
27    H:        so Australia's a country
```

Reading aloud by the mother occurs in the course of a conversation about the information on the screen that the young child has located. The child first notices and draws his mother's attention to the words 'Sydney' and 'Australia', and then indicates a star beside each, thus explaining his assessment (3–4) that Sydney and Australia look the same. Henry's mother formulates the relationship between the two place words (13) and Henry indicates that this is 'news' to him (15) through his use of the change-of-state token 'oh' (Heritage, 1984). His mother then begins to talk again and this turn includes the preface 'that says' followed by a gap and then reading aloud (17–18). Her use of 'you see' draws Henry's attention to words that he probably can read (since he has displayed previously that he can read many on-screen texts). There is no immediate response from Henry and so the mother adds clarifying information to explain what is meant by the words she has just read. She then provides additional information, and after a gap, Henry follows with his interpretation of an aspect of the information – 'so Australia's a country' (27).

The mother's reading aloud draws Henry's attention to a potentially relevant piece of information. That is, in the context of his apparent confusion about Sydney and Australia looking the same, reading this information from the screen serves to help Henry understand the difference between Sydney and Australia (an understanding that he comes to display at line 27).

This example illustrates that not all reading from the screen and within a speaker turn is prefaced with 'it says', 'that says' or 'this says'. So, Henry does not employ the words when he is indicating and reading words on the screen initially (2–3). Across all our data, there are many occasions where reading occurred, although the analytic focus of the collection is on occasions encompassing reference through use of 'it says', 'that says' and so on.

Soliciting reading from another party

Making reference to on-screen texts using a question makes reading aloud by another party a relevant next action. The question indexes words through the use of 'this', 'that' or 'it', followed by 'say' (or a variant). This next sequence

shows a child's use of two such questions to occasion, or make relevant, the production of reading aloud by his mother.

When using digital technologies, Jaiden (aged four) was helped by his father or mother. He often played games, including the phonics program Reading Eggs, and accessed sites that provided information that interested him. On this occasion, he accessed a site that was familiar to him – Wallace and Grommit. He sought help from his mother who was out of the room when he accessed the site. The questions occur in lines three and six.

Example 3 (Jaiden 5537 12.03)
```
1        J:      Mu:::M?
2                (1.0)
3→       J:      >what does<(.)↑thi:s say?
4                ((Mum walking into room))
5        M:      °thi:s:[::::::]°
6→       J:             [°what does it]say?°
7                (2.0)
8→       M:      wallet how to play
9                (2.2)
10       M:      >this is< Wallace and Gromit's
11               >sprocket< >rocket<
12               (1.0)
13       J:      °(but)it doesn't work (every) time°
14               (2.0)
15               ((J clicks to resume computer activity))
```

Jaiden summons his mother and then follows up with a question (1–3). His mother enters the room and speaks, repeating the word 'this' by latching her talk onto Jaiden's and extending the sounds of the word, as she makes her way to where Jaiden is sitting in front of the desktop computer (5). Jaiden again asks a question of his mother, overlapping her talk (6). There is a 2-second gap, accountable as the time taken by the mother to locate the text on the screen and produce a reading of it (8). The mother's response is a direct reading of the words on the screen. Shortly after, she takes another turn at talk (10–11). Her talk again can be heard as a continuance of her previous reading of the text on the screen. The reading is followed by what appears to be a complaint by Jaiden about the program (13) and then the resumption of his computer activity (15).

Not all questions that were designed to occasion reading aloud were asked by children. Nor was reading always immediately provided in the following turn. This

absence reminds us that the deployment of a particular action in interaction does not necessarily result in the provision of a subsequent action that it was designed to elicit; questions do not always result in answers, for example. In this next example, Jaiden was using the phonics program, Reading Eggs, a site that he often accessed. He needed to locate the word 'mat' from a list of four words and select it. His mother was in the room and he initiated her help. The question occurs in line 14.

Example 4 (Jaiden 3805 04.56)
```
1                 (2.0)
2       J:    I ca::n't (0.2)nd it=
3       M:    =what you have t- (0.2) read
4             them all out then and check
5             which one is which
6             (0.4)
7       J:     this one?
8             (1.0)
9       M:    >no no< (0.2) you have to do
10            it
11'            (0.4)
12      J:     this one?
13            (1.0)
14→     M:    what does that say?
15            (2.0)
16→     J:     mmm (0.4) ah (0.4) tu- (0.2) tuh
17            (2.0)
18→     J:     °I don't know_°
19            (1.0)
20→     M:    mat_
21            (0.8)
22       J:    mat_
```

Jaiden indicates to his mother that he is experiencing trouble finding the word (2). His mother provides a way to go about it. She advises Jaiden to read the words in the list and check each word (3–5). There is a short gap (6) during which time Jaiden moves the cursor on the screen. He indicates one word by pointing with the cursor on the screen and asks the question 'this one?' (7). There is a silence and then his mother responds (9–10). She withholds (Davidson, 2015) provision of an answer by reminding Jaiden that he has to find the word himself. Jaiden again seeks confirmation from his mother by indicating

another word on the screen with the cursor and asking the question 'this one?' (12). His mother asks the question, 'what does that say?' (14). Her talk works again to withhold providing an answer to Jaiden's previous question because it is a counter question (Markee, 1995, 2004) that requires Jaiden to read the word he has indicated (14) in order to confirm whether or not it is the word he is looking for on the screen. Jaiden's response is to make the individual sounds of the letters in the word (16). His mother again hearably withholds a response to Jaiden's sounding out of the letters (17). He then makes a claim not to know what the word is (18). After another gap, which makes it possible for Jaiden to attempt another response, his mother provides the word (20) and Jaiden repeats it (22).

This sequence shows Jaiden's mother's use of talk to require his reading of the text – a purpose of the phonics program overall. She appears to resist doing the reading for Jaiden. Instead, Jaiden provides the sounding out of letters (perhaps not surprising given that he is using a phonics program).

Occurrence of both practices in an extended sequence

The four examples above have established two distinctive turns found in individual sequences within the collection. Next, we consider the occurrence of both during a single extended sequence. This analysis further establishes how the turns are resources drawn upon for producing reading aloud that is relevant to the course of some broader activity.

In Example 5, Henderson (aged three and a half) and his mother had accessed a new game. Although fluent with other games that he played regularly, Henderson wanted to play a different game and so had downloaded a new game with the help of his mother. In the course of their activity that followed, reading the instructions on the screen was oriented to by Henderson's mother. Her reading provided information about why Henderson would need to take particular actions to play the game. The lines that contain the talk that occasions reading are lines 3, 11, 20 and 24.

Example 5 (Henderson 0005 06.04)
```
1      H:     which one next?
2             (0.2)
3→     M:     ↑I:::  dunno? ↓wha:[:t's it] say?
4      H:                        [this one?]
                                      |
6             (0.4)
7      H:     um
8             (0.4)
```

```
9     H:      on
10            (0.6)
11→   M:      a::h >so you< push it says push to
                         |
12            increase speed
13            (1.0)
14            ((M points to another button))


15    M:   ((reads)) jump
16           (0.4)
17           or to [change the land grind
18                 [((H puts nger near 'jump)))


19    H:    °mmm°
20           ((H moves nger to point to print at
21             top of screen))
22→   M:      that ↑says tap the jump in the ai:::r ((points))


23→   M:      to change the land gri:nd okay?
24            (0.4)
25    H:      ↑o↓ka:y
                 |
```

Henderson's initial question (1) requests information from his mother about what button to press next. Her response (2) begins with a claim not to know and then provides the question 'what's it say?' This question orients to printed information on the screen and makes reading it immediately relevant to being able to address Henderson's question. Her talk is overlapped by further talk from Henderson (3–4) as he points to the screen. Henderson next provides a hesitation marker ('um') and the word 'on', hearable as a possible answer to his mother's question (7 and 9). His mother's eventual response begins with 'aah', indicating a realisation on her part, and then she provides the information that a push is required (11). This may be a verbal indication, of silent reading by the mother. She then uses a preface to reading ('it says') and follows it by reading the words on the button (12). Her talk provides a

literal reading of the words indicated and provides a clarification of her previous comment that the action required is to push.

After a silence, his mother points to different text on the screen and reads again (14–17), and she continues her previous activity of reading from the screen without specifically stating that this is what she is doing. Henderson points briefly to the text that she is reading and provides the minimal response 'mmm' (18–19). He then points to other text on the screen (20–21) and his mother reads again. His mother appears to take Henderson's shift to other text indicated through pointing as a non-verbal request for her to tell him what it says (22). Her turn begins with the preface 'that says' and then provides a literal reading of the words (22–23). She concludes her turn with 'okay', thus requiring an indication of understanding from Henderson, which he provides (26).

This example provides a particularly rich illustration of the ways in which reading on the screen occurs during parent and child interactions. The screenshots are particularly important for showing how closely attuned talk that leads to reading is to the appearance of text on the screen. Pointing by Henderson's mother is closely aligned with her reading and with the use of 'says'. Although the screen is small, her pointing is finely focused on words and sentences as she reads for Henderson. Talk and pointing happen quickly but serve to draw the child's attention to what is being read. The handheld technology enables close coordination of talk and pointing by the child and parent to indicate specific text, or places, on the screen.

This extended sequence illustrates how the use of a new game occasioned reading by a parent or questions about it from a child. In the study, children sometimes sought to learn how to do something new that was of interest to them and parents' reading of instructions or other information usually led to some next action or actions from the child, thus potentially enabling learning. Reading was not the end point of activity but rather was tied to getting on with doing some other activity.

Discussion

A number of key understandings can be drawn out in relation to reading and the interactions of young children with their parents during digital technology use. These understandings are particularly salient given the ubiquity of digital technology in young children's homes and everyday activity.

Orientations of young children and their parents to reading aloud from the screen

The methodic use of turn types provided reading aloud or made its provision the relevant next action. This methodic use showed that on certain occasions during the use of digital technology, young children and their parents oriented to print on the screen and to reading it aloud. Although there are other examples of reading in the data corpus of home digital technology use, what our focus on this specific collection allows for is consideration of child and parent orientations to reading aloud evinced in the occurrence of certain turns in talk and encompassing use of the 'saying' verb to refer reading words and more extended texts. Our focus allows us to comment on how print reading was made relevant by participants on specific occasions.

In the collection, young children's production of a question turn (e.g. 'what does that say') was followed by the parent reading aloud, which provided children with access to written information that they could not yet read. There was an epistemic asymmetry (Heritage, 2012) evident in the questions produced by children; that is, they genuinely indicated that they did not know what a text 'said' and needed parents to read it for them. Children also took reading by parents as providing the correct information that they needed. Parents, on the other hand, asked children to do reading aloud despite being competent readers. In other words, when adults asked a question of young children and it resulted in reading aloud, it provided a display of reading competence or an occasion to practise reading rather than information that adults did not possess or could not read. Further, when adults pursued answers that children failed to provide initially, what texts 'said' was worked out by children or eventually led to adults providing the answer when a display of competence was not forthcoming or words could not be 'worked out' in the talk that followed.

For children, questions appeared to be a resource that led to the provision of information that enabled children to 'know how to go on' (Wittgenstein, 2009). Often children's non-verbal actions, following reading aloud by parents, indicated what they took words to 'mean' for the course of their on-going computer activity. That is, rather than talk further about it, children 'went on' with their computer activity by performing some next physical action, such as clicking the computer mouse or simply returning their attention to the screen. The orientations of children to print, evident when they were asked about it, suggested their understanding was that it was potentially

relevant to what they did next. Therefore, interactions produced situated readings that informed local actions in broader activity.

Reading aloud for instrumental purposes

Studies of young children's reading at home and in educational settings are important for exploring 'the ways in which print reading fits within the broader constructions of reading that are generated by young children's exposure to multimodal texts' (Levy, 2009: 3). Our collection analysis shows how reading letters, words and more extended texts emerged during young children's engagement with digital texts and was integral to their effective use of digital technologies, to gaining information and learning how to do new things. Many sequences in the collection were produced during Web searching, use of unfamiliar websites or playing unfamiliar games. Reading was most often for children's own purposes, such as accessing factual or procedural information at a time when it was needed.

Young children actively sought information that could help them acquire new skills or take relevant actions. Reading by parents was often followed by some next action by young children (such as clicking on a particular button). Actions by children indicated their understanding and highlighted the importance of reading in the context of activity with digital technology. This finding establishes meaning and purpose as central to reading during children's activity with digital technology and illustrates the importance of knowing what print 'says' within the conduct of social practices with digital technology. Although most children did not read texts aloud themselves, reading provided by parents accomplished reading for meaning (Miller and Warschauer, 2014) and actions by children that followed reading made it meaningful for them.

The analysed interactions showed how talk resulted in reading displaying a 'local rationality' (Heap, 1985). Reading did not occur in isolation from ongoing activity that young children were engaged in already; rather, 'unfolding events' on the screen prompted requests for reading aloud, or the provision of reading aloud by a parent, and made good sense (Heap, 1985). This practice was particularly the case when children were accessing unfamiliar sites, programs, games or activities. Reading enabled some next action, such as choice of a particular search result or instructions that could inform learning how to play a new game. Reading aloud was made to matter as central to activity by children and adults at certain points, and became inconsequential at other times as digital activity progressed.

How young children's interactional competence enabled reading aloud

Previous studies employing conversation analysis acknowledge the importance of young children's embodied actions for meaning making during interactions with others (Kidwell and Zimmerman, 2007; Lerner and Zimmerman, 2003; Lerner et al., 2011). Our analysis establishes how embodied actions, in particular pointing with a finger, were important in talk about on-screen texts and reading them. Use of the cursor was another way that pointing was accomplished. Although occurring quickly in time, pointing was finely coordinated with talk to draw the visual attention of the recipient of talk to what was being asked about or read. Deictic terms such as 'this' or 'that' were accompanied by pointing to places indicated on the screen; this is especially important, given the myriad images and written texts that were often visible. Parents and children attended to what was being said but also looked to where pointing specifically referenced talk and required close attention. Verbal and embodied actions were finely coordinated. Understandings of what pointing accomplishes interactionally in this collection build on previous studies that note the occurrence of pointing during the use of particular digital technologies by young children.

Across the collection, children employed both practices, although not all individual children produced both. These turns encompassed the words 'it says' (or 'that says' or 'this says' or 'it say'), and these are an important resource for identifying and making reference to written language and talking about it (Robins and Treiman, 2009). Although previous research (Robins and Treiman, 2009) has identified the age at which young children begin to use these words to refer to written texts, this study establishes how requests for reading and the provision of reading aloud were always located through talk and embodied actions to what was going on at the time, what was 'written' on the screen and some action that might occur next. Young children displayed their communicative competence (Danby, 2002; Danby and Davidson, 2007) through their sequential location of questions and answers during their activity.

The production of spoken language that was hearable as reading aloud rather than conversation also displayed young children's competence. That is, whether reading or whether listening to reading, young children needed to be able to differentiate between talk and reading aloud. The use of the preface 'it says' was one way to mark that what followed next was reading aloud of text. When they are recipients of reading aloud, children show their understanding that they have been provided with what something 'said' through taking some next action (especially if what had been read was

an instruction or directive, such as 'push'). Such actions also indicated their interpretation of information that reading provided and competently displayed understanding.

Conclusion

Numerous studies have examined and established the benefits of parent–child interactions during young children's use of e-books (Dore et al., 2018; Hoffman and Paciga, 2014) and print-based texts. Our study used analysis of a collection (Sidnell, 2013) to examine interactions that produced reading aloud from the screen during young children's everyday digital activity. The analysis established two interactional practices: reading aloud the text using a preface such as 'it says' or soliciting information using a question. Based on our consideration of these practices, we conclude that reading aloud from the screen is an important information source that is enabled through parent–child interactions during the in situ accomplishment of activities that young children like to undertake. Future research might seek to examine a larger collection of home data or might encompass talk within institutional contexts such as preschools.

ORCID iD

Christina Davidson (iD) https://orcid.org/0000-0003-2333-2924

References

Anderson A, Anderson J, Lynch J, et al. (2012) Extra-textual talk in shared book reading. A focus on questioning. *Early Childhood Development and Care* 182(9): 1130–1154.

Arrow AW and Finch B T (2013) Multimedia literacy practices in beginning classrooms and at home: The differences in practices and beliefs. *Literacy* 47(3): 131–137.

Atkinson M and Heritage J (1999) Jefferson's transcript notation. In: Jaworski A and Coupland N (eds) *The Discourse Reader*. London: Routledge, pp.158–166.

Baker CD and Freebody P (1993) The crediting of literate competence in classroom talk. *The Australian Journal of Language and Literacy* 4: 279–294.

Burnett C (2010) Technology and literacy in early childhood educational settings. *Journal of Early Childhood Literacy* 10(3): 247–270.

Clift R (2005) Discovering order. *Lingua* 115: 1641–1665.

Danby S (2002) The communicative competence of young children. *Australasian Journal of Early Childhood* 23(3): 25–30.

Danby S and Davidson C (2007) Young children using language to negotiate their social worlds. In: Makin L, Jones Diaz C and McLachlan C (eds) *Literacies in Childhood: Changing Views, Challenging Practice*. 2nd ed. Port Melbourne, Vic: Elsevier, pp.118–132.

Danby S and Davidson C (2019) Webs of relationships: Young children's engagement with Web searching. In: Erstad O, Flewitt R, Kümmerling-Meibauer B, et al. (eds) *Routledge Handbook of Digital Literacies in Early Childhood*. Abingdon, Oxford: Routledge, pp.402–416.

Danby S, Davidson C, Ekberg S, et al. (2016) "Let's see if you can see me": Making connections with Google Earth in a preschool classroom. *Children's Geographies* 14(2): 141–157.

Danby S, Davidson C, Given L, et al. (2015) Composing an email: Social communication in an early years classroom. In: Garvis S and Lemon N (eds) *Technology and Young Children*. Oxon, UK: Routledge, pp.5–17.

Danby S, Davidson C, Theobald M, et al. (2013) Talk in activity during young children's use of digital technologies at home. *Australian Journal of Communication* 40(2): 83–100.

Davidson C (2009) Young children's engagement with digital texts and literacies in the home: Pressing matters for the teaching of English in the early years of schooling. *English: Practice and Critique* 8(3): 36–54.

Davidson C (2012) Seeking the green basilisk lizard: Acquiring digital literacy practices in the home. *Journal of Early Childhood Literacy* 12(1): 24–45.

Davidson C (2015) "Don't tell him just help him": Restricted interactional activity during a classroom writing lesson. In: Chevalier F and Moore J (eds) *Producing and Managing Restricted Activities: Avoidance and Withholding in Institutional Interaction: Studies in Conversation Analysis*. Amsterdam; Philadelphia, PA: John Benjamins, pp.385–437.

Davidson C, Danby S, Given L, et al. (2016) Facilitating young children's use of the Web in preschool. *Journal of Research in Childhood Education* 30(4): 569–584.

Davidson C, Danby S and Thorpe K (2017) "Uh oh": Multimodal meaning making during viewing of YouTube videos in preschool. In: Narey M (ed.) *Multimodal*

Perspectives of Language, Literacy and Learning in Early Childhood: The Creative and Critical "Art" of Making Meaning. Educating the Young Child. 2nd ed. Dordrecht: Springer, pp.233–255.

De Jong MT and Bus AG (2002) Quality of book-reading matters for emergent readers: An experiment with the same book in a regular or electronic format. *Journal of Educational Psychology* 94: 145–155.

Dore RA, Hassinger-Das B, Brezack N, et al. (2018) The parent advantage in fostering children's e-book comprehension. *Early Childhood Research Quarterly* 44: 24–33.

Freebody P (2013) School knowledge in talk and writing: Taking "when learners know" seriously. *Linguistics and Education: An International Research Journal* 24(1): 4–74.

Freebody P and Freiberg J (2001) Re-discovering practical reading activities in homes and schools. *Journal of Research in Reading* 24(3): 222–234.

Garfinkel H (1967) *Studies in Ethnomethodology.* Englewood Cliffs, NJ: Prentice-Hall.

Han J and Neuharth-Pritchett S (2014) Parents' interactions with preschoolers during shared book reading: Three strategies for promoting quality interactions. *Childhood Education* 90(1): 54–60.

Heap J (1985) Discourse in the production of classroom knowledge: Reading lessons. *Curriculum Inquiry* 15(3): 245–279.

Heap J (1991) A situated perspective on what counts as reading. In: Baker CD and Luke A (eds) *Towards a Critical Sociology of Reading Pedagogy: Paper of the XII World Congress on Reading.* Amsterdam; Philadelphia: John Benjamins, pp.103–139.

Heap J (2005) Ethnomethodology and the possibility of a metaperspective on literacy research. In: Beach R, Green JL, Kamil M, et al. (eds) *Multidisciplinary Perspectives on Literacy Research.* New York, NY: Hampton Press, pp.35–56.

Heritage J (1984) A change-of-state token and aspects of its sequential placement. In: Atkinson JM and Heritage J (eds) *Structures of Social Action: Studies in Conversation Analysis.* Cambridge, England: Cambridge University Press, pp. 299–345.

Heritage J (2012) Epistemics in action: Action formation and territories of knowledge. *Research on Language and Social Interaction* 45: 1–29.

Hester S and Francis D (1997) Reality analysis in a classroom storytelling. *British Journal of Sociology* 48 (1): 96–112.

Hoffman JL and Paciga KA (2014) Click, swipe, and read: Sharing e-books with toddlers and preschoolers. *Early Childhood Education Journal* 42: 379–388.

Johnson GM (2010) Young children's Internet use at home and at school: Patterns and profiles. *Journal of Early Childhood Research* 8(3): 282–293.

Justice LM, Weber SE, Ezell HK et al. (2002) A sequential analysis of children's responsiveness to parental print references during shared book-reading interactions. *American Journal of Speech-Language Pathology* 11: 30–40.

Kidwell M and Zimmerman DH (2007) Joint attention as action. *Journal of Pragmatics* 39: 592–611.

Kim JE and Anderson J (2008) Mother-child shared reading with print and digital texts. *Journal of Childhood Literacy* 8(2): 213–245.

Korat O and Or T (2010) How new technology influence parent-child interaction: The case of e-book reading. *First Language* 30(2): 139–154.

Lankshear C and Knobel M (2003) New technologies in early childhood literacy research: A review of research. *Journal of Early Childhood Literacy* 3(1): 59–82.

Lee JR (1991) Language and culture: The linguistic analysis of culture. In: Button G (ed.) *Ethnomethodology and the Human Sciences*. Cambridge, England: Cambridge University Press, pp.196–226.

Lerner GH and Zimmerman D (2003) Action and the appearance of action in the conduct of very young children. In: Glenn P, LeBaron C and Mandelbaum J (eds) *Studies in Language and Social Interaction*. Mahwah, NJ: Lawrence Erlbaum, pp.441–457.

Lerner GH, Zimmerman D and Kidwell M (2011) Formal structures of practical tasks: A resource for action in the social life of very young children. In Streek J, Goodwin C and LeBaron C (eds) *Embodied Interaction: Language and Body in the Material World*. Cambridge, NY: Cambridge University Press, pp.44–56.

Levy R (2009) "You have to understand words ... but not read them": Young children becoming readers in a digital age. *Journal of Research in Reading* 32(1): 75–91.

Markee N (1995) Teachers' answers to students' questions: Problematizing the issue of meaning making. *Issues in Applied Linguistics* 6: 63–92.

Markee N (2004) Zones of interactional transition in ESL classes. *The Modern Language Journal* 88: 583–596.

McNab K and Fielding-Barnsley R (2014) Digital texts, I-pads and families: An examination of families shared reading behaviours. *The International Journal of Reading: Annual Review* 20(1): 53–62.

McPake J, Plowman L and Stephen C (2013) Pre-school children creating and communicating with digital technologies in the home. *British Journal of Educational Technology* 44: 421–431.

Miller E and Warschauer M (2014) Young children and e-reading: Research to date and questions for the future. *Learning Media and Technology* 39(3): 283–305.

Neumann MM, Hood M and Ford R (2013) Mother-child referencing of environmental print and its relationship with emergent literacy skills. *Early Education and Development* 24: 1175–1193.

Rideout V (2011) *Zero to Eight: Children's Media Use in America*. San Francisco, CA: Common Sense Media. Available at: www.commonsensemedia.org/sites/default/files/research/zerotoeightfinal2011.pdf (accessed 7 December 2019).

Robins S and Treiman R (2009) Talking about writing: What we can learn from conversation between parents and their young children. *Applied Psycholinguistics* 30: 463–484.

Roskos K, Brueck J and Widman S (2009) Investigating analytic tools for e-book design in early literacy learning. *Journal of Interactive Online Learning* 8(3): 218–240.

Sacks H (1995) *Lectures on Conversation*. Oxford: Blackwell.

Sacks H, Schegloff EA and Jefferson G (1974) A simplest systematics for the organization of turn-taking for conversation. *Language* 50: 696–735.

Schegloff E (2007) *Sequence Organization in Interaction: A Primer in Conversation Analysis (vol. 1).* Cambridge: Cambridge University Press.

Schegloff EA, Jefferson G and Sacks H (1977) The preference for self-correction in the organization of repair in conversation. *Language* 53: 361–382.

Shamir A and Korat O (2007) Developing educational e-books for fostering kindergarten children's emergent literacy. *Computers in the School* 24: 125–143.

Shamir A and Korat O (2008) The educational electronic book as a scaffolding tool for children's emergent literacy in low versus middle SES groups. *Computers and Education* 50: 110–124.

Sidnell J (2013). Basic conversation analytic methods. In Sidnell J and Stivers T (eds) *The Handbook of Conversation Analysis.* Malden, MA: Wiley-Blackwell, pp.77–99.

Smith CR (2001) Click and turn the page: An exploration of multiple storybooks literacy. *Reading Research Quarterly* 36: 152–178.

Stephen C, Stevenson O and Adey C (2013) Young children engaging with technologies at home: The influence of family context. *Journal of Early Childhood Research* 11(2): 149–164.

ten Have P (2002) The notion of member is the heart of the matter: On the role of membership knowledge in ethnomethodological inquiry. *Forum Qualitative Social Research: Theories, methods, applications* 3(3). Available at: http://www.qualitative-research.net/index.php/fqs/article/view/834/1813

Thorpe K, Hansen J, Danby S, et al. (2015) Teachers, teaching and digital technology: Reports from the early childhood classroom. *Early Childhood Research Quarterly* 32: 174–182.

Strouse GA and Ganea PT (2017) Toddlers' word learning and transfer from electronic and print books. *Journal of Experimental Child Psychology* 156: 129–142.

Wittgenstein L (2009) *Philosophical Investigations.* (English translation by Anscombe GEM, Hacker PMS and Schulte J. Revised edition by Hacker PMS and Schulte J) 4th ed. Malden, MA: Wiley Blackwell.

Wolfe S and Flewitt R (2010) New technologies, new multimodal literacy practices and young children's metacognitive development. *Cambridge Journal of Education* 40(4): 387–399.

Appendix 1. Transcription symbols.

[[	Utterances/actions that begin at the same time
[	Overlap in speakers' talk/actions
]	Point where simultaneous talk finishes
=	Talk between speakers latches or follows without a break
( )	Indicates length of silence in seconds, e.g. (2.0)
:::	Indicates that a prior sound is prolonged, e.g. li::ke
-	Word is cut off before completion, e.g. ta-
> <	Words enclosed within are said at a faster pace than surrounding talk
?	Rising inflection
¿	Rising inflection but weaker than ?
.	Stopping fall in tone
,	Continuing intonation
!	Animated tone
↑	Marked rise in pitch
↓	Marked fall in pitch
<u>no</u>	Underline indicating greater emphasis
CA	Upper case indicates loudness
°	Softness, e.g. It's a °secret°
hhh	Aspiration or strong out-breath
(it is)	Words within are uncertain
( )	Indicates that word/s could not be heard from recording
(( ))	Verbal descriptions, e.g. ((sits down))

(adapted from Atkinson and Heritage, 1999)