Talk about a YouTube video in preschool:
The mutual production of shared understanding for learning with digital technology

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Much of what is written about digital technologies in preschool contexts focuses on young children's acquisition of skills rather than their meaning-making during use of technologies. In this paper, we consider how the viewing of a YouTube video was used by a teacher and children to produce shared understandings about it. Conversation analysis of talk and interaction during the viewing of the video establishes some of the ways that individual accounts of events were produced for others and then endorsed as shared understandings. The analysis establishes how adults and children made use of verbal and embodied actions during interactions to produce shared understandings of the YouTube video, the events it recorded and written commentary about those events.

Introduction

Learning with technologies is an important aspect of young children's engagement with them (Plowman, Stephen & McPake, 2010), however, studies overwhelmingly continue to focus on how children learn skills rather than more complex practices. This is illustrated clearly in the area of technology and early literacy (Merchant, 2009). Major literature reviews establish the predominance of a focus on the use of technology for teaching print literacy skills in the early years (Burnett, 2010; Lankshear & Knobel, 2003) in educational settings. Lankshear and Knobel (2003) note that the majority of studies emphasise how children learn to encode and decode print using stand-alone computers rather than how they might participate in a range of online social practices that use networked technology. They also acknowledge a dearth of studies of young children's out-of-school literacy practices with digital technology. Burnett's (2010) review showed that the field of early literacy and technology has continued to focus on skills instruction in educational settings. She coined the expression 'technology as deliverer of literacy' (2010, p. 254) to categorise such practices, and notes that far fewer studies examine technology as a medium for meaning-making or interacting with online texts in educational settings in the early years.

Examinations of young children's interactions with digital technologies foreground the need for preschool teachers to build on and develop young children's competence (Wohlwend, 2009). However, many of these studies also emphasise skills—in this case, with the technology itself—rather than meaning-making or engagement with authentic digital practices that are found outside of educational contexts. Curriculum guidelines for use of digital technologies in the early years also continue to focus on skills development and to provide simplistic accounts of what young children might be expected to do and learn when using a range of digital technologies (Burnett, 2010) in educational settings.

Importantly, the small number of existing studies of technology use in the home reveal some of the ways that children experience learning that is 'a co-constructed outcome of the activities and cultural practices that children engage in with others' (Plowman, Stevenson, McPake, Stephen, & Adey, 2011, p. 361). Children's own competences have been acknowledged as an important feature in their use of digital technologies and in their learning more broadly cast in the home (Danby et al., 2013; Davidson, 2010). They have been shown not only to be early developers of particular skills but also to produce and manage their social activity during engagement with technology. In the home, children
Three questions: What shared understandings were oriented to during the viewing of the YouTube video? How were shared understandings accomplished? What interactional resources were drawn on by adults and children to produce shared understandings? Overall, the interactional resources were drawn on by adults and children that occurred during the viewing of a YouTube video in a preschool classroom. We address educators can make an important contribution through learning with digital technology. We argue that preschool educators need to build on the experiences of young children. Plowman and others argue that preschool teachers have an important role to play, particularly through guided interactions which will provide help when required by children or which plans for new learning. For them, guided interactions take the form of strategies familiar to many preschool teachers. They suggest, for example, the oral strategies of enjoying, explaining, prompting and providing feedback (Plowman et al., 2010) during children's use of digital technology. They also acknowledge the limited attention given by preschool educators to digital technology. Plowman et al. (2010) argue that support for learning in preschool classrooms requires:

... not only the recognition of children's existing competences, but also the actions and interactions that extend the children's learning from what they can do unaided to new ways of being that allow them to participate in and adapt to the ways of their culture (2010, p. 51).

This perspective suggests that we may find out more about how young children's learning with technology is supported through examination of actions and interactions in situ in the preschool setting, particularly between young children and educators. Further, conducting this kind of examination will produce rich accounts of 'new ways of being' and of social relations with others (Aarsand, 2007) in preschools rather than a narrow focus on skills development.

In this paper, we examine interactions between children and adults that occurred during the viewing of a YouTube video in a preschool classroom. We address three questions: What shared understandings were oriented to during the viewing of the YouTube video? How were shared understandings accomplished? What interactional resources were drawn on by adults and children to produce shared understandings? Overall, the aim is to contribute understandings of young children's learning with digital technology. We argue that preschool educators can make an important contribution through interactions with young children during use of digital technologies.

Theoretical perspective

The study is framed by ethnomethodology (EM), an approach which seeks to describe people (or members') methods of sense-making as documented by them during their everyday interactions with others. From the perspective of EM, sense-making produces order and can best be understood as 'witnessable collective achievements' (Rawls, 2000) or accomplishments. Ethnomethodology draws on the phenomenological theory of Schutz (1967; 1970). The notion of intersubjective understanding is central to Schutz's work. He proposes that human beings possess a 'reciprocity of perspectives' (Schutz, 1970, p. 183) such that private experience is transcended by a common world (Schutz, 1962a, cited in Heritage, 1984, p. 55; Sharrock & Anderson, 1991, p. 65). The work of ethnomethodology is to make apparent the methods for the logical production of this world in common. An important way members do this is through displaying their understandings of the actions of others during interaction. This may even include cognitive phenomena such as how people tell and 'make tellable, inter alia, their beliefs, memories, forgettings, dreams, understandings, thoughts' (Coulter, 1991, p. 189).

Conversation analysis is a variant of ethnomethodology that provides analytic methods for explicating the ongoing production of sense-making during interactions (Sacks, 1995). It requires the sequential analysis of turns at talk (Schegloff, 2007) since understandings of what people take to be going on are displayed during talk. For the purposes of conversation analysis, interactions are captured in audio or video recordings of naturally occurring activity and then encoded in transcripts of those. Transcripts used in conversation analysis are developed using Jefferson notation (Atkinson & Heritage, 1999) which provides symbols for a wide range of interactional features such as silences, laughter, changes in intonation and so on.

Analysis of talk-in-interaction provides a way to examine closely how turns provide actions, respond to previous actions and produce 'environments' for responding actions to follow. Analysts may discern and thoroughly describe interactional phenomena such as adjacency pairs of turns (for example, question-answer or summons-response, or placement of particular words in certain turns for example, how 'okay' might be used to conclude a sequence of talk when used in the third turn of a sequence of turns). Although clearly verbal action is the central focus, analysis encompasses other aspects of interaction. Silence within turns and between turns is integral to understanding the import of actions. Embodied actions such as nodding and gesturing can act as turns in sequences of interaction, particularly during interactions between very young children and adults (Kidwell, 2011).
Together, ethnomethodology and conversation analysis enable the explication of ways that people do things that bring about their social worlds. These might include doing particular kinds of social actions (such as issuing a verbal invitation), social activities (such as completing a checklist during a consultation) or being particular kinds of people through interactions (doing 'being the doctor' or 'being a patient' during a consultation). Most importantly, people are attributed with competence in the production of their social worlds. A body of work addresses how children competently do this during interactions with each other and with adults (see Busch, 2011; Danby & Davidson, 2007; Kidwell, 2011; Moore, Danby & Farrell, 2009; Theobald, 2012).

Methods

This article draws on data from a large funded study of Web searching in early childhood settings of preschool and home in Queensland, Australia. The study consisted of three phases: an initial survey of preschool teachers; recordings made of their classrooms and of focus children in those classrooms and in their own homes; and a survey of parents based on the analysis of recordings made in the home. We have reported aspects of the study previously (see Danby et al. [2013] for further details). Here we consider extracts from a single video-recording made in a preschool. On the day of the recording, the mother of a focus child told the teacher about a YouTube video that the family had made on the weekend. This video became the focus for extended interactions between the teacher, the child (Oliver), and the other children. The teacher asked Oliver, aged four, to help her locate the video and they did this using a laptop which was located at the front of the room. She and Oliver stayed near the laptop as the YouTube video played. The other children watched it on a large retractable projector screen that was also at the front of the room. The analysis considers talk and interaction that occurred during the course of viewing the YouTube recording. For ease of reading, a short precis of the video is first provided and then extracts from the transcript of the viewing are analysed.

Analysis

The video is a recording of a weekend drive in the forest. The young child's family had all gone bush driving. They struck a problem with a bad road. Other cars also experienced trouble. As the video progresses, written text appears on the screen in places. The text provides brief commentary which is read aloud by a teacher assistant in the room. The text is:

A nice relaxing Sunday drive ...
Until the road disappears ...
One slip and you’re gone!
The road went from bad to worse ...

Now we are stuck and we can’t go back!
Pavel tries to go around but the mud is too deep
Finally Dad risks what's left of the road
Yanks Pavel out ...
Then we go ...
And our new friend we met while stuck makes it
Turned out to be a nice day ...
Lol ...
... but not going back there
The analysis that follows establish how adults and children alike made use of verbal, non-verbal and embodied actions during interactions to produce shared understandings of the YouTube video, the events it recorded and written commentary on those. The analysis begins with the teacher assistant's reading of one line (Now we are stuck and we can't go back!), some minutes into the actual viewing of the YouTube recording.

Extract A

(See Appendix for transcript conventions)

345 A: (reading) [now we are stuck and we walk back)
346 [[I\O looks at Al]]
347 A: [can’t go \ back
348 [[(I\O looking at the big screen])
349 (1.6) (music playing)]
350 O: ye:::s! (turning to Al)
351 (0.6)
352 T: oh:hw t what (ifrowning at screen)]
353 C3: () (slip into water)
354 O: yea:::
355 (0.6)
356 A: °0oh dear°
357 G: ()
358 C2: what happened
359 ?: (over the way)
360 (0.8)
361 C4: stop
362 (0.2)
363 O: a::nd (pointing) dis (0.4) woad
364 (0.4)
365 A: tries to [go around but the mud is
366 O: ](it dishapeccred () in
367 (0.2) \ the shream
368 (1.6) (music playing)]
369 O: .hhh (1.0) dey had to do:w and tross the
370 wa=t ter
371 T: they had to go across the water
372 O: yeah.
373 (1.4)
374 C: °it disappear::red°
375 C2: °they can’t all they’ll get wet (0.2) they’ll
376 (0.2) \ they’ll get°=
377 G: =°is [that your car°
378 C2: [the best ( ) and (]
379 (IO looks away from G to big screen)]
380 (IT nodding in direction of children)
381 (3.0)
The teacher assistant (A) resumes reading from the video that is projected onto the screen (345 and 347). She doesn’t tell the children that she is reading so they must make the connection between what she says (reads) and what they are seeing on the screen (printed text on the various recorded images). The text that she reads presents the problem of the video—the car is stuck and they can’t go back. Oliver (O) indicates his attention to the teacher assistant through gaze (346) and then he looks to the action on the screen (348) and back to the teacher assistant. His verbal action (yes) endorses the accuracy of the formulation of the situation (350) that the reading of the written text has provided.

Following this, the teacher (T) indicates her assessment of the on-screen situation as very problematic or serious (352). Her verbal comment (‘oh what’) is accompanied by frowning. These two reactions provide verbal and non-verbal commentary in response to the events that are playing out on the screen. These actions are followed by a verbal response from Oliver (‘yeah’) which appears to endorse the teacher’s responses (352–354). The teacher assistant also responds with a comment (356) that indicates her realisation of the gravity of the situation (oh dear) and then provides further commentary (359 and 361). Comments are also produced from other children who are watching (357–361). Oliver then provides further information (363, 366, 367, 369 and 370) in addition to that currently available on the screen and to that provided by the teacher assistant when she first began reading from the video (A nice relaxing Sunday drive ... Until the road disappears ... ). The information appears to provide connections that the audience (children and teachers) may not necessarily have made—that this is the road that disappeared. In other words, Oliver adds to what has already been made available verbally and visually. It projects ahead of the problem and provides the solution. The teacher’s almost complete repetition of Oliver’s turn makes her hearing of his previous turn for confirmation by him (371 and 372) which he provides (‘yeah’).

At this point a number of children respond (374–378) to the video and to Oliver’s prior talk about it. During the video other children provide comments out loud that provide indications of their understanding of what happened (‘it disappeared’) or ask questions that seek information that they are uncertain about at the time (377). Oliver does not respond directly to the children but looks instead at the screen (379) following the question about the car. The teacher provides agreement that appears directed at one of the children through her gaze (380).

Extract B

<table>
<thead>
<tr>
<th>Time</th>
<th>Children’s Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>382</td>
<td>A: “is that your dad Oliver?”</td>
</tr>
<tr>
<td>383</td>
<td>(0.7)</td>
</tr>
<tr>
<td>384</td>
<td>O: nu nu ↑ no::wh=</td>
</tr>
<tr>
<td>385</td>
<td>T: “no”</td>
</tr>
<tr>
<td>386</td>
<td>A: “no::”</td>
</tr>
</tbody>
</table>

387  O: dat mine Mum Dad
388  A: “finally Dad risks”
389  T: ↑.hhh=
390  O: (raising arm)(dat mine Dad (pointing))
391  ((T covers mouth with hands))
392  ((0.6))
393  A: “what’s left of the road”
394  O: that mine Dad
395  (3.2)
396  ((T takes hands off mouth and looks at O))
397  G: is that where they slip in the ↓ water
398  A: “yanks Pavel out° (reading))
399  O: (looses:ks
400  ((T grimaces as she watches))
401  (1.6)
402  G: is that the slip in the ( )
403  (1.0)
404  A: “was a bit lucky”
405  (1.4)-(T shakes her head then looks at O))
406  C1: “oh I see°
407  ((O looks at T))
408  ((O glances at screen and then looks back at T))
409  O: yeah
410  (T looks at screen and frowns))

Talk turns to the identification of someone who is visible on the video. The teacher assistant questions Oliver, although she provides a candidate answer (‘is that your dad Oliver?’) rather than simply asking who the person is. The question results in Oliver’s indication that the person isn’t his father; he then indicates his parents by naming them and pointing to them (387, 390 and 394). Pointing supports his use of ‘that’ because it indexes the word to a place on the screen and directs attention to a particular figure. Thus pointing is an important resource for Oliver during his talk about the video. Overlapping much of this activity is the teacher’s response to what can be seen on the screen. Her actions are dramatic (e.g. she covers her mouth with both hands) and clearly portray non-verbal assessments of something terrible happening (391). Together, she and Oliver produce finely coordinated responses to the on-screen action. Oliver directs the teacher to look at the screen (399) and she grimaces (400) as she does. She follows this with a shaking of her head and then directly looking at Oliver as if to seek a response from him. Oliver quickly checks what is happening on-screen and then endorses her response (‘yeah’). During this time the teacher hasn’t spoken; it is her non-verbal actions which prompt Oliver’s reactions and agreement with her. Her frown in line 410 indicates her understanding of the ongoing seriousness of what is being viewed on the screen. Simultaneously, the teacher assistant and other students also provide further comments about what they are seeing. Neither the teacher nor Oliver respond to this talk although the comments are potentially available for responses by others (401 and 405).
Extract C

411 (2.2M(children talking to each other))
412C1: ( )
413 (1.4)
414G: is that the ( )
415 (0.5)
416O: yeah (looking at G)
417 (1.5)
418G: well why'd you get bogged?
419 (1.6)
420 O: a mountain woad
421 (2.0)
422 C: ( )
423 (3.0M(T shakes head at O)
424 O: (wave)
425 (1.2)
426 C: ( )
427 (3.8)
428 A: we got the (cars)
429 O: ou-
430 (0.8)
431 O: (we get) 1 our car get up a toss
432 (1.0)
433 T: is this your car? (pointing at screen))
434 (0.6)
435 O: yeah!
436 T: were you in the car
437 (0.6)
438 O: no
439 T: where were you?
440 (0.6)⇒(music playing))
441 O: out side
442 (3.0)⇒(music playing))
443 (0.4)
444 G: they're stuck!
445 T: what did you think (.) Oliver?
446 C: °( )°
447 O: um
448 T: when this was happening,
449 (4.0)⇒(music playing))
450 O: u:mm
451 (2.0)⇒(O watching screen))

Over the next few seconds of interaction, the teacher is watching the big screen and not speaking. During that time, the children talk to each other (411–412) and then one child directly asks Oliver about information that he should know, for example, to tell why they got bogged. Oliver provides responses but then informs them that his car made it across. The teacher has again provided a non-verbal assessment of the situation as difficult (through the use of her headshake), Oliver produces the information that his family's car got across the water (431). The teacher questions Oliver providing the candidate answer (433) that the car on the screen is his. She indicates the car that her question is referring to by pointing. Oliver confirms that it is and the teacher then questions further to ascertain whether Oliver was in the car (436). Following his negative response, the teacher probes further to require Oliver to tell exactly where he was (441). He provides the information ('outside') in response.

The video continues to play and a child then provides a formulation of the image that can be seen on the screen ('they're stuck!'). The teacher then asks Oliver about his thoughts on the day at that time. The question makes relevant Oliver's thoughts as a direct observer to the events as they occurred (405 and 407), not just as a viewer of the YouTube recording in the classroom. The question attributes Oliver with thoughts about the experiences which are not known to the adults and children present but which may be shared now through a response to the question. Although Oliver provides a turn marker ('um') he does not speak further (450–451) but looks to the screen instead.

Extract D

452 A: °and our new friend we met while
453 stuck makes it°
454 (9.6)⇒(music playing))
455 A: °turned out to be a nice day°
456 T: chhh=
457 A: =°oho hohohohoho°
458 (3.0)
459 O: they went de::re
460 A: 1 he:::y whose that!
461 (0.5)
462 Ti: that's Oscar
463 (0.9)
464 G: what happened?
465 (1.0)
466 G: what happened to his car.
467 (2.0)
468 A: °thankfully ()°
469 T: that's a good question (nodding))
470 Ti: it fell down into a ( )
471 T: hahahaha
472 (0.4)
473 Ti: it fell down into the [( )]=
474 T: (whta(h)ht are
475 they doing=
476 (0.2)⇒(T touches O's arm)
477 T: =here Oliver?((smiling at screen))
478 O: u:mm
479 (0.2)
480 C4: °O:live°
481 (0.4)
482 O: dey taking a pho- do::
483 (0.4)⇒(O points at screen and smiles))
484 T: a:h hahahahaha
485 (2.5)
486 T: that's your Dad4( (smiling at O))

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The unfolding events up until this point, on screen and off, have produced 'something terrible' that happened. This was visible in the YouTube recording, in its written commentary that was read by the teacher assistant, in talk about the recording and in embodied reactions to aspects of it. However the video shows that circumstances improved on the day and the video's final moments show Oliver's family and friends in playful situations. The written text on screen also endorses the message that things ended happily. Significantly, we see how the teacher, teacher assistant and Oliver use laughter and smiles to produce a happy ending to the day's events and the common understanding that the final moments of the video are humorous.

So, the teacher assistant reads aloud that another person and his vehicle made it across. This is followed by commentary about the day on the screen ('turned out to be a nice day'), also read by the assistant. Then the teacher and assistant produce coordinated laughter across two turns (456–457). Talk about the video continues with question-answer sequences of turns by the assistant and Tia. One student raises the matter of what has happened to the car (464 and 466) which has not been directly addressed in the commentary read by the assistant. The teacher's assessment that it is a good question indicates to Gerald that this is a shared concern. She also follows her question with laughter which provides a response to the unfolding actions on the screen.

The talk that follows again requires Oliver to produce explanations for the teacher and for the over-hearing audience of children. The questions are to do with what is happening on the screen. Again, the questions attribute Oliver with knowing things about the day that aren't known to Gerald. It seems that the video shows circumstances improved on the day and the video's final moments show Oliver's family and friends in playful situations. The written text on screen also endorses the message that things ended happily. Significantly, we see how the teacher, teacher assistant and Oliver use laughter and smiles to produce a happy ending to the day's events and the common understanding that the final moments of the video are humorous.

Discussion

A distinguishing feature of young children's engagement with digital technologies is the need to encompass multimodal meaning-making with digital texts (Bearne, 2009; Burnett, 2010; Merchant, 2009) rather than meaning-making that focuses on the printed word. The analysis of the video viewing reminds us, however, that multimodal resources are integral to human interaction (Mondada, 2008) not only to reading, viewing or constructing digital texts; spoken rhetoric requires multimodal resources for meaning-making (Bearne, 2009). The importance of multimodal resources for interaction was very evident in the ways that children and adults made use of gestures, gaze and facial expressions when producing shared understandings of the YouTube video they watched. The employment of multimodal resources during interaction enabled joint attention to be established and for turns to be taken using gesture and so on, rather than talk, during the sequential accomplishment of interaction about the video. Multimodal resources were important in producing non-verbal responses to on-screen actions, for example. This was very evident in the teacher's responses to the dangerous and 'scary' situation that constituted much of the video; on occasions, her unspoken reactions prompted endorsements of agreement from Oliver. Her expressions were also highly visible to all in the room as evidence of her interpretation of the unfolding events on the screen. Thus, they were responses available for interpretation by others.

Producing shared understandings meant that the viewing of the video was a thoroughly interactive classroom event. Interaction was generated constantly—mostly by the teacher but also by children and the teacher assistant. Talk about written texts is a common occurrence in educational settings and has been extensively documented (see for example, Baker & Freebody, 1993; Freiberg & Freebody, 1995) as evincing particular characteristics of institutional interactions. As well, classroom interactions may evince teachers' inabilities to harness the experiences of children and their pre-existing competences (Wolfe & Flewitt, 2010). In this case we see how even very young children were required to produce institutional ways of talking about digital texts, digital technologies and experiences of past events. Children were not only developing ways of communicating in this preschool setting; their interactions with the teacher and each other required that competence. They needed to be able to respond to questions, to hear talk as being addressed to them (or not). Further, they needed to hear questions as occasions for providing information in order to produce shared understandings or to be the listening audience to the talk of others. Much of the talk was between Oliver and the teacher; the rest of the children were the over-hearing audience to that talk. All children,
however, needed to understand when to talk and when not to talk; this required their interpretation of language, gaze, intonation and posture.

Much of the teacher questioning was addressed to Oliver and occasioned the provision of information by him about the events recorded on the video. The viewing audience (the teacher, assistant and other children) had an information gap since the YouTube video provided only a partial record of what had happened on the day. Questioning of Oliver enabled the gap to be bridged by developing shared understandings about the events of the day, and about places and people recorded in the video. To do this, the teacher oriented to Oliver as knowledgeable (Kidwell, 2011), possessing information that could be shared through her questioning of Oliver and his responses that produced information for her but also for the over-hearing audience of children.

The viewing of the YouTube video provided a number of experiences for learning with technology. Although the analysis cannot substantiate claims about what children learnt, it does give insight into learning that potentially was made available through talk that developed shared understandings about the video. This encompasses the practice of recording experiences and making them available through YouTube, about how these recordings represent experiences and how the interplay of written texts and the visual can be interpreted when viewing recordings. Talk about the video produced it, implicitly, as a partial record of a previous experience. The written text itself provided literal information but also interpretations of events. Further, the text provided ironical commentary at times on the recorded events. The responses of adults to these aspects of the viewing enabled children to experience and contribute to these practices. The use of YouTube for locating and viewing recordings made by Oliver’s family on this occasion, or by other people, was itself a practice that the young children were potentially experiencing, if not consciously learning about.

Conclusions

Young children’s engagement with digital technology provides many opportunities for learning. In this article, we have addressed this through the examination of the mutual production of shared understandings on a single occasion. This establishes that the uptake of digital technologies in preschools encompasses more than the development of skills with particular technology. Meaning-making can, and should be, an important aspect of digital technologies’ use and educators in preschools clearly have important roles to play in the pursuit of developing understandings through interactions with children.

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