Investigating pupils' interactions around digital texts: a spatial perspective on the 'classroom-ness' of digital literacy practices in schools

BURNETT, Cathy <http://orcid.org/0000-0001-6087-244X>

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Abstract

This article argues that, in informing our understanding of the possibilities and challenges associated with new technologies in educational contexts, we need to explore what counts to children when using digital texts in classrooms, and what children think counts for their teachers. It suggests that such insights can be gained by investigating children's interactions around these texts and, drawing on Goffman's work, considering how these are framed. This is illustrated using examples from a study of classroom digital literacy events. The article suggests it is important to consider how frames disrupt, intersect with and over-layer each other.

Key words: digital, literacy, classroom, Goffman, frame

Investigating children's interactions around digital texts in classrooms: how are these framed and what counts?

Two 9 year-old children- Natasha and Carl- are working together in a classroom to research the New Zealand earthquake of 2011. They have been given a list of internet sites to search and asked to record information about the earthquake on a grid. They work together around the small screen of a netbook and have to negotiate how to complete the task and who does what. None of this negotiation is voiced – to an observer it seems to happen automatically - but it must build on conventions established earlier, as these two children work regularly together. Carl does most of the typing and clicking between screens. Occasionally he consults Natasha - 'Shall we go on this one or this one?' When he finds information relevant to the questions on the grid, he dictates it to Natasha who notes it on the grid. Natasha's only questions are to the teacher. At one point she checks that it is acceptable to improvise with the layout of the grid, 'We just realised we wanted to put that there [miming moving text from one box on the grid to another to clarify what she means] - so we just did that [draws a line to indicate where it should be], is that OK?' At another point she catches the teacher's attention to tell her that they have run out of room on the grid to note their answers. Smiling, the teacher tells Natasha herself to decide what to do about this.. 'Write on the back?' suggests Natasha. 'Good idea,' says the teacher.

This incident raises questions about how children interpret tasks involving reading and writing around digital texts in classrooms. What do Carl and Natasha see as important when reading and writing in digital environments when in school? Are there differences between how they value digital practices in and out of school? How do different children engage with such tasks? And what does this say about how they see themselves – and how they want others to see them- as readers and writers? Insights into how children make sense of opportunities to use and create digital texts are important in the current context. Digital environments provide new opportunities to enable children to create, access and share multimedia resources and engage in collaborative and 'distributed' learning (Lankshear and

Knobel 2011; Davies and Merchant 2009). Many have considered how learners might use new media to take increasing control of their lives and engage critically with the world around them (Bigum 2002; Jenkins 2006). Examples of uses in education include computer gaming (Apperely and Walsh 2012), virtual worlds (Merchant 2010), multimedia composition (Burn 2009) and social networking (Barden 2012). Such opportunities however can present challenges to practitioners as they may not sit easily alongside other priorities and practices. In many countries - including England where this article originates - such developments occur against a background of literacy policies and practices that focus primarily on paper-based alphabetic literacy. Studies of teachers' views suggest that competing discourses around literacy and technology can mean it is difficult for practitioners to fully respond to the possibilities offered by digital texts within their language and literacy provision (Stagg Peterson 2012; Honan 2010); whilst teachers may be active participants in digital environments in their own lives, they may see such practices as inappropriate within classroom environments (Author 2011a).

An increasing body of work is investigating how teachers are making sense of these tensions and exploring practical responses. We see for example how educators are using new media in innovative ways, aiming to support children's creativity and critical engagement with digital texts (for example, Atkinson, et al 2012; Colvert 2012; Waller 2012). I suggest here that, in complementing such work, we need insights into how *children* interpret such opportunities, not just in terms of what they produce but what they *do during the process of engaging with digital texts*. Anne Haas Dyson's work has shown us how children re-work classroom tasks and how school literacy tasks can be experienced and enacted in multiple ways as children over-layer them with different purposes and relationships:

> ...whatever curricular materials and activities educators offer, deep in children's own lived worlds, these activities are renegotiated, influenced by social goals which educators might not anticipate are infused with cultural material- thematic content and literacy values. (Dyson 1993, 3).

If we are to understand the barriers and opportunities associated with integrating digital technologies ever more within our classrooms, we need to investigate and analyse what children are doing. We need to understand how children are making opportunities 'count' for them and also what they seem to think 'counts' for their teachers. Using a series of examples from a study of classroom digital literacy events, I suggest that this means looking at ephemeral and incidental actions and interactions that occur as children go about their everyday digital tasks. I suggest that in analysing these it is helpful to consider the frames (Goffman 1974) that seem to structure and be generated through these actions and interactions but also to see children's framing of these activities as fluid and multi-layered. I end by outlining directions for further enquiry in this area.

A study of classroom digital practices.

The illustrative examples used in this article are taken from a small-scale study through which I investigated how children in four classrooms worked online and on-screen in school and how online/offline spaces intersected in classrooms (Author 2011b). The teachers of these four classes volunteered for this project as they shared an interest in using new technologies in innovative ways within literacy provision. As a researcher/lecturer in a local university, I approached two teachers directly as I knew of their interest in this area. The other two were volunteers recruited via an invitation to teachers on a Masters course focusing on literacy pedagogy.

Over 6 months, I observed children aged 6-10 years in four classrooms for a total of 2530 minutes. I operated as a non-participant observer, although did respond when children directly approached me for help or initiated any other conversations with me. I arranged visits at times when teachers had planned for children to use what I called 'networked' or digitally connected texts as part of their everyday classroom activity. These included the internet and various online resources as well as shared documents and wikis. The examples used here focus on activities involving: authoring an electronic book; creating a PowerPoint presentation based on internet research; and use of online video as a stimulus for story-writing. During each visit, I observed 2 or 3 children and all the children with whom each of these children interacted as I was observing them.I made field-notes focusing on three areas:

- children's interactions with texts, equipment, objects and each other; influenced by multimodal interaction analysis (Jewitt 2009), I noted gaze, posture, gesture and movement around the classroom as well as words;
- what children did on-screen (the kinds of texts they composed or accessed as well as the on-screen processes and tools they used as they did so);
- references made by children to other times, places or experiences (such as comments, memories or questions related to their lives or to content encountered through online texts).

I used field-notes rather than audio/audiovisual recordings. This meant I was able to capture the different ways that children interacted with others and the resources around them, sometimes focusing on the whole class, sometimes individuals, pairs or groups. The detail of my record was inevitably limited by what I chose and managed to note down. In contextualising the study, I interviewed children and teachers about their experiences of using digital texts within and outside school and made notes on texts produced and accessed. Finally, I worked with the teachers involved to discuss the significance of what I observed and have written jointly with them about this (author et al 2012).

Given the small scale of the study, it would be inappropriate to arrive at a set of generalisations about different ways that children frame what counts for them and their teachers. Moreover, my interpretation of these examples is necessarily partial, resting on my personal analysis of what their actions and interactions suggested they felt was significant in each encounter. Each of these events could be interpreted in different ways. However, by presenting these examples, I simply want to illustrate the kinds of insights that can be gained by looking at ephemeral and incidental incidents and demonstrate how a focus on framing can alert researchers and practitioners to dimensions of children's engagement with digital texts that may be relevant to what they produce or seem to learn.

Looking at classroom digital practices through looking at framing.

Previously, I have used theories of space to explore the importance of looking at what I call the 'classroom-ness' of digital technology use. This has two strands. It emphasises the significance of the classroom context to how children interact with and around digital texts. At the same time, it highlights how the classroom context is hybrid and fluid as different children work to establish classroom spaces in different ways. This duality, I argue, is significant to meaning-making (Author 2011b; Author 2012). In this article, I want to build on these ideas by considering how Goffman's work on frame analysis (Goffman 1974) can be useful in exploring how children interpret class-based opportunities to engage with new technologies. I suggest that this is useful in investigating what seems to count to children in digital literacy activities and how they position themselves as readers and writers. In doing

so, I follow the work of other language and literacy researchers who have used Goffman's work to research language and literacy practices (Maybin 2006; Leander and McKim 2003).

For Goffman, human activity is reproduced in relation to *frames* that cue us to act and interact in certain ways. As we do so, we help maintain these frames, reinforcing these ways of acting and interacting. For example, in classrooms, appropriate behaviours by teachers and pupils are cued in relation to mutual understandings about classroom conventions. Teachers and children move, interact and use resources in ways that are likely to differ from how they do at home. Frames are generated by 'opening and closing temporal brackets and bounding spatial brackets' (Goffman 1974, 251) so an activity is framed by where it occurs and when it starts and finishes. In a classroom (and during a lesson) tables, chairs and resources all signal expectations around the kinds of roles children will take and how they will be positioned by others. Children are expected to behave differently once inside: bodies are regulated and rules (explicit and implicit) for teacher/pupil interaction generate expectations that pupils will talk (or not talk) in certain ways at certain times. The classroom door, and the bells ringing before and after lessons, act as 'boundary-markers' (p.251). Upholding a frame also involves designating some things as irrelevant, discounting actions and events that are outside the frame. The process of framing is reflexive: the frame is cued by resources, behaviour and so on, and then upheld by what people do and produce.

In the light of this, we can look again at the incident described at the beginning of this article. The two children's different responses are interesting. We might see Carl as dominating, holding the mouse and clicking between screens with Natasha as secretary, noting down what he finds out. From this perspective we could see the pair as both reinforcing a framing of computer-use as 'boys' work.' At the same time, we could see Natasha's actions as evidence for what she thinks counts in reading and writing at school. Whilst she seems to accept Carl's ownership of the screen unquestioningly, Natasha owns the page. Moreover, she refers to her teacher in checking out (twice) how she should arrange the notes on paper. As a child who often worked to position herself as a 'good' student, it is interesting that she seems more concerned about what happens on paper than on screen. If we look at it like this, we might see Natasha less as Carl's personal assistant and more as a child who knows the rules of classroom literacy and wants to be seen as succeeding on those terms. As a 'good' student, Natasha is perhaps happy to be the one in charge of the grid and how their work is presented on it. She maybe brings a classroom literacy frame built around pencil and paper to the chance to work on-screen.

These interpretations are speculative. They do however demonstrate how thinking about frames can help us consider how children are making sense of activities involving digital texts in the light of how they see reading and writing at school. Frames around new technology use may intersect with frames around literacy, and also possibly with those associated with gender and with certain relationships. This perspective can help us consider how ongoing classroom literacy routines, resources and tasks may cue children to see literacy in certain ways and how this in turn may be significant to how they engage with digital texts.

Of course people, including children in classrooms, often act outside the frame. In doing so they may hide what they are doing, checking if anyone is watching, for example, or making sure they are not seen or overheard. In the classrooms I visited, I sometimes saw children angling their laptop lids so that their on-screen play (e.g. continuing to explore a program when they should have moved onto another task) was not visible. Goffman describes such activity as operating within a 'concealment track' (1974, 218). Importantly then, people can operate within more than one frame at a time. They may sustain 'subordinate channels of

activity' so that they have more than one 'storyline in any stream of interaction' (p.219). Janet Maybin (2006) uses Goffman's work to highlight how children in classrooms address different agendas within single classroom events. Her analysis of spoken interactions illustrates how children use talk to position themselves differently to their peers and their teachers and foreground and background various social purposes as they engage in schooled tasks. She observes much of this through focusing on what happens in the gaps or 'interstices' between official spaces. We can see this in the following example:

Authoring an electronic book.

6 year-old David is sitting with 4 other children at a table. They are composing stories individually on netbooks and using a program with templates to help them present their story as an electronic book. The boy next to David, Ashley, has problems logging onto the netbook because he has incorrectly entered the user-name and password that all children in the class are expected to use. David takes control, leaning across to log him on. Next David sees that a girl's story is being projected on the large interactive whiteboard at the front of the classroom. (This is because she is working at the teacher's computer which is wired to the whiteboard.) He notices that she has started writing her story on the space reserved on the template for the title and comments, 'She's done it wrong.' None of the other children on the table respond. David looks back at his own screen: 'I'm just going to make this text box bigger'. He does so then nudges Ashley and comments, 'Hey -look at this'. He uses a function key to toggle rapidly between 2 screens (the text box and the desktop). Ashley glances briefly but then looks back at his own screen and continues writing his electronic book. A few minutes later, David reads what he's written so far to Ashley, who laughs.

In this incident we could see David's attempts to establish a dominant position within the group as seeming to count for him. He seems to do this in different ways- acting as expert (in logging on), critic (of the girl's work) and comic (toggling between screens and reading out his story). Dyson notes how children often remix and re-work classroom tasks to 'take the stage in the peer world' (Dyson 1993, 71) and I would suggest this may be what David is doing here. Of course his actions are associated with the task set by the teacher and the social and material resources made available through this; he spends time writing his electronic book and many of his improvisations are enabled by working on a laptop: announcing and demonstrating his technical expertise; playing with the keys; commenting on others' work. This example suggests how tasks involving digital texts can be framed in multiple ways as children's purposes and intentions intersect with teachers' objectives. David's actions are framed by the schooled task but he may be foregrounding a competitive frame which, while relying on the task set, has little to do with the teacher's intentions.

This kind of incident is resonant with those described by Maybin and Dyson in their analyses of classroom activity. In my examples, the resources used by children are different- children are using digital technologies - but children's and teachers' objectives over-layer each other in similar ways. This is important. We need to look at classroom interactions around digital texts not just because they are potentially *different* but because they are in many ways *similar* to those associated with other texts. Interactions in classrooms are *always* complex and over-layered with different purposes and priorities. A focus on frames reminds us of this. It reminds us that children will draw on the affordances of new technologies in different ways that may or may not coincide with what educators have in mind. Given this we can explore how dimensions of a digital literacy event may be framed differently for different participants. I illustrate this point in the following example.

Creating a PowerPoint presentation based on internet research.

During the school's 'Refugee Week', two 10 year-old boys- Sam and Joe- are using a website to research the experience of a girl, Florinda, whose family had fled from Angola to Zambia. The teacher asks them to use this research to create a PowerPoint presentation of a first person account of the child's hopes and fears. As the teacher gives instructions, Sam opens up PowerPoint and begins to re-size the text box on the first slide. Once the instructions have finished, he re-sizes it a few more times and then checks with his partner Joe: 'That'll be all right won't it.' Next he goes to the website and reads and highlights the relevant information. He then returns to the PowerPoint and writes a title for their story: 'Escape from soldiers.' There is no discussion with Joe about this. Joe then changes the colour of the title to red. (Again, there is no discussion.) Sam uses Word Art to change the format, location and size of the title and Joe comments: 'That's better. That's it- that's it.' Sam asks, 'Shall we get a picture?' and goes straight to the website and copies and pastes a photo onto the PowerPoint slide. Together they collect a series of photos and then spend some time moving these around. Sam leans back, looks at the screen and asks, 'Do you want to type? Shall we copy and paste?' Joe says 'no' and starts typing: 'If I was Florinda.' Sam then changes the font to blue, then red. Joe writes, 'The worst thing in my life would be losing my dad.' Sam asks, 'Can I write the next sentence?' and does so: 'The best thing in my life would be going to school next year.' Joe sings the words softly to the tune of the song: 'The Best Thing in My Li-ife.' He then re-centres a paragraph and animates the title so it 'glows'. He comments, 'That's awesome' and Joe approves, 'That looks like Star Wars....Whoo.' At this point their teacher addresses the whole class, noting with approval that one child has included reasons for the hopes and fears in his presentation. Sam and Joe take turns to go back to their sentences, adding reasons. They do this quickly and without discussion.

In this example, again we might see children as over-layering a task with other interactions. They seem to frame the completion of the slideshow as 'a job to be done', tackling it with little spoken negotiation. At the same time, the activity seems to operate within what Maybin calls a 'playful frame' (2006, 156). Sam and Joe inter-weave their work on the presentation with play around other texts- the singing of *The Best Thing in My Life* and the visual evocation of *Star Wars*. These references to popular culture in no way reflect the serious themes being explored in refugee week- and there are no explicit traces of them in the PowerPoint produced. They could be seen as representing a subordinate channel of activity that is about shared cultural references used to amuse and perhaps affirm a relationship. These two frames seem to intersect as Sam and Joe experiment with the layout of their slideshow, changing font type, size, colour and layout and confidently fetching pictures from the website, cutting and pasting them into their presentation, even though the teacher never asked them to do this.

The decisions that Sam and Joe make as they create the PowerPoint suggest that, like Natasha, they have clear ideas about what is sanctioned in reading and writing in class. They certainly seem to see working multimodally as legitimate when working on screen and online in school: they confidently experiment with font, colour and layout and cut and paste images to include in the slideshow. Notably however they seem to take more ownership of their use of visual features. They use trial and error to achieve visual effects they like- experimenting with animation, colour and positioning- but the effects seem more designed to please each other than to fit with the content of the PowerPoint. Tensions emerge however when Sam suggests they 'cut and paste.' Of course the boys have been cutting and pasting images before this point but when Sam asks about 'cutting and 'pasting' Joe knows he is referring to cutting and pasting words from the website and says 'no.' Whilst cutting and pasting images is

apparently acceptable, he seems to see cutting and pasting text as illicit. It may be too crude a distinction to state that their use of words operates within a schooled literacy frame and their use of other modes within a playful frame. It does though seem to show the boys approaching modes differently: the visual seems to count to them but they know that verbal originality counts to their teacher. This incident, I suggests, illustrates how different modes may be recruited differently within different frames at different moments even during the production of a single text. In this example frames seemed to run parallel – the children played round the text and produced the required outcome but the two did not seem to inform each other.

At other times, activity that could be seen as operating in different frames seemed to converge, as in the final example:

Use of online video as a stimulus for story-writing.

A class of 8-10 year-olds are preparing to write mystery stories which will be published online. As a stimulus, the teacher plays them a series of online videos which show possible story starters. Each includes a spooky opening sequence accompanied by suspense music and sound effects. As the videos play, some children watch open-mouthed. Some make quiet comments to friends ('wow'), some mime what they think will happen next or embody sound effects (by shaking heads or tapping in time with the sound of spooky footsteps). Others exchange glances or 'knowing nods' with friends.

The second of the 3 videos includes a sequence where a camera tracks through a church and graveyard ending with a lingering close-up of a gravestone. When it finishes, there is a very brief pause as the teacher turns away to sort out the next clip. As he does so, one boy- Adam - turns to his friend Dan and mimes being a zombie, holding his arms out straight in front of him and swaying from side to side. He then mimes ripping his arm off, lifting up the torn arm, holding the severed end to his mouth and drinking the blood from it. Finally he mimes tearing a piece off his friend's arm and eating it. All this happens silently in the pause between videos.

As in the previous example, we see a playful frame over-layering an official frame. The official classroom frame is cued in many ways – by the screen, the teacher standing in front of the class and all the children facing front. When their teacher faces them the boys sit quietly with eyes forward and wait to be invited to contribute. The zombie exchange happens in the interstitial space generated in the pause between videos as the teacher turns his back. This seems to signal a shift in frame to Adam who silently improvises around what he sees on screen. With what Taylor calls 'postural intertextuality' (Taylor 2012), Adam creates a brief performance shared with his friend by embodying references to popular texts- zombie films and video games. In doing so, he re-works and recontextualises his knowledge of the genre. Adam's use of gesture enables him to do this whilst satisfying the expectation that he is silent within the class. The incident seems positioned in a 'concealment track.'

Interestingly, the mimed story generated in interstitial space preceded the writing of a story in official space. When these two boys started writing a story together based on this stimulus, the zombie character appeared within it along with Adam's gory actions. Adam's zombie mime seemed to generate (or affirm) a shared frame of reference which he and Dan continued to uphold when they started composing their story. Through this we could see Adam's identity as 'pupil-as-writer-at-school' combining with his identity as 'pupil-as-zombie-fan' and as 'friend-to-Dan'. In any case, the physical actions stimulated by the video seemed to play a part in the process of agreeing, creating and enjoying the process of composition. This incident illustrates how frames are not inevitably fixed or held apart. Different frames may

not just run parallel but over-layer or merge with one another- or as Goffman writes, be 'laminated' (1974, 156).

Why is it helpful to look at framing around children's use of digital texts?

A focus on framing can help us re-visit *how* we look at what happens around new technologies in classrooms – and *what* we look at when we do so. It helps us explore how what matters to educators and policy-makers (as embodied not just in teachers' plans and actions but in the resources and opportunities children encounter in classrooms) intersects with what matters to children and the contradictions, tensions and possibilities that emerge as a result. The events described here were ephemeral and could easily be seen as inconsequential. Normally they would have left no trace. I argue here however that we need to look at these ephemeral incidents because they help us see the complexity of what happens as children interact with digital and online texts in classrooms.

It is worth repeating here that I am not suggesting that this foregrounding and backgrounding of different frames is *particular* to digital tasks. Dyson's and Maybin's studies have provided us with rich analyses of how children make sense of and use many different classroom tasks for their own purposes. At the same time new technologies do generate new resources and do enable children to organise themselves in different ways. We need to look at how these are significant to framing: how different frames seem to be associated with how children interact around digital texts and how, in turn, opportunities to use digital texts seem to generate shifts and mergings between frames. I suggest it is helpful to focus on how frames are maintained through:

- what children do ***on-screen***;
- what children do ***off-screen***;
- how they ***relate to*** other children or teachers;
- how far they draw on ***experiences, skills and knowledge about digital texts developed out of school***.

Children may draw on ***on-screen resources*** in different ways, seeing some modes and media as regulated and others much more available for experimentation. So we see Natasha apparently concerned about getting things wrong on paper and Sam and Joe with clear ideas about what their teacher will sanction. We do not know how children generated these understandings – or whether or how their teachers privileged alphabetic literacy. However, they do illustrate how assumptions around classroom reading and writing – what matters and what counts - can shape what children do on-screen.

By looking at what they do ***off-screen*** we can see how material and embodied dimensions of literacy events are important to the children's meaning-making. On-screen activity always happens in the physical environment of the classroom. As with other language and literacy activities, the material environment and arrangement of bodies in space are significant to how children make sense of opportunities to use digital texts (Rowe 2008). So, they do not just make meaning on-screen but off-screen. In understanding this, we need to look at how children improvise around tasks- their songs, stories and experimentation- and how they negotiate and make meanings in physical space- using not just what goes on screen but talk, gesture, movement and so on. We also need to look at how children draw on the material affordances of equipment, not just looking at screens but how they use and respond to the physical presence of equipment, through angling laptops for example. As we see in the fourth example above, children may express ideas through their bodies that complement or

counteract the meanings they encounter and relate to each other physically in ways that are significant to what they do on-screen.

Working on screens in classrooms is more public than working on paper and may be more communal than when using the same technologies at home; children sit in classrooms alongside or opposite each other and can see each others' screens. This means insights into how children ***relate to*** others are significant. As we see in the examples, children respond to others in different ways, sometimes negotiating how they make meaning together, sometimes deferring to them and sometimes working alone. Of course increased use of mobile technologies- such as iPads- may be associated with different arrangements of bodies in space (and consequently different kinds of social interaction). There is a great deal of research which has analysed children's interactions around computers- see Lomangino et al's work on different power relationships, for example (Lomangino et al 1999) and Hyun and Davis's exploration of the evolution of 5-6 year-olds' dialogue around computers (Hyun and Davis 2005). Here however I argue that we also need to focus on what children's relationships with others may say about how they frame engagement with digital texts, and what these interactions may say about what matters to children or what they feel matters to their teachers, e.g. whether they see reading and writing as individual or collaborative. This matters particularly if the possibilities associated with using digital media are associated with working in new collaborations with others.

More generally, framing can be useful in helping us understand how and why children do or do not draw on ***skills, knowledge and experience of digital texts developed out of school***. There may be moments when children foreground identities associated with school literacy practices- for example, 'being a writer who is neat and completes their work'- and others when they foreground identities associated with out-of-school literacy practices- for example, 'being someone with an extensive knowledge of zombies.' I emphasise again that I am not suggesting here that we should see different frames as irreconcilable or distinct. These in/out of school identities are hard to disaggregate. Natasha's positioning of herself as 'good' student may be aligned to ways in which she presents herself out of school, whilst Adam draws on his zombie expertise to write a story that satisfies school requirements. Similarly, David references the schooled task at all times, but does so in ways that support other frames, and Sam and Joe meet their teachers' requests but also improvise, orally and using visual resources, in ways that seem to perform other kinds of identities.

A focus on framing, I suggests draws our attention to the complex interplay of children, tasks, tools, modes, teacher, and the larger classroom context. We might consider for example: how different frames may have been constructed if different children had been involved in the tasks described here; how Natasha and Carl may have interacted around another kind of task or text; what kinds of stories might have been prompted by another film genre (and by who); and how might girl/girl pairings have been associated with other kinds of framings. A focus on framing also helps us see children's interactions with digital texts in terms of other trajectories linked to their developing identities as users of digital texts, readers and writers, as learners in and out of school, as friends, family members and so on. Children's interactions are not confined to the moment but are inflected by other times and places. Framings then are not distinct but disrupt, intersect with and over-layer one another and the identities they are associated with can be seen as fluid and multilayered rather than plural.

In considering how digital texts are framed, I do not therefore want to suggest a sharp distinction between official and unofficial frames or to polarise the 'official' and 'unofficial.' However, I do suggest that in understanding how children are making sense of opportunities

to use digital texts it is helpful to look at what happens in the concealment track or in subordinate channels of activity. This helps us gain insights into dimensions of children's skills, knowledge and experience that they may not see as relevant to school digital literacy. It is worth knowing that Adam has access to a wealth of zombie stories and that David can confidently navigate his laptop and impart this knowledge to his friends. At the same time, we also need to know why some of these skills and understandings feature less in classroom digital practices for some children. For example we need to consider why Natasha seemed content to opt out of using a laptop altogether. This can help us identify not just who is skilled at using new technologies and who is not, but how different groups of children are seeing the relevance of their digital experience to schooled literacy practices- and to their schooled identities.

Directions for Further Inquiry.

A focus on framing can help us see what it is about interacting with digital texts that matters to children in classroom contexts and what they seem to think matters in education. We need to consider how far frames flex and contract to include and exclude different identities and the meaning-making possibilities with which they are associated. If we are to work towards school literacy provision which values creative, collaborative and cultural interactions with digital media, we need to recognise and where necessary challenge these frames. This may mean working with children to explore and reflect upon the process of meaning-making. It also means reflecting on how our actions as educators, as well as policies and the material environment, help construct certain framings of literacy.

Investigating framing is difficult because it involves recognising the complexity of classrooms and different ways that purposes, activities and priorities intersect. As my brief and tentative analysis of these examples illustrates, analysing framing is clearly open to interpretation. However I suggest that the examples do suggest that there is much to be gained by taking time to observe and notice not just those actions that are immediately relevant to the classroom task but to take seriously the incidental and ephemeral. Developing such work, I suggest, requires the use of ethnographic approaches which enable close analysis of classroom digital practices and a focus on understanding what these mean for children.

In summary, I suggest that the examples used here raise a series of important questions for educators and researchers to consider when reflecting upon, reviewing and researching classroom settings. These include questions about the kinds of frames generated around classroom literacy practices and how meaning-making with digital texts is accommodated within these (or not):

- *What counts to children when engaging with digital texts in classrooms?*
- *How does this coincide with what counts to teachers?*
- *How is this aligned with what counts in policy at national, regional and local level?*
- *What are the different ways in which individual children position themselves in relation to reading and writing digital texts?*
- *How do different frames seem to merge and intersect?*

There are also questions which link to *how* frames are established and upheld:

- *How do children's actions and interactions (on and off-screen) help establish what counts?*

- *Which skills, knowledge and understandings do children draw on? Are there any they discount?*
- *How do adults' actions help establish what counts (teachers, parents/carers, teaching assistants, head teachers, etc)?*
- *How are national, regional and local requirements (relating not just to technology use but to literacy and other curriculum subjects or other concerns such as child protection.) significant to frames associated with digital texts in classrooms?*
- *How does the material environment (and meanings and interactions associated with this), e.g. resources, furniture, classroom design and layout, work to uphold certain frames?*

I suggest that these are important questions to explore if we are to continue to develop and evaluate new ways of integrating digital texts across the curriculum in ways that encourage children to capitalise on the possibilities they enable. They prompt us to evaluate established behaviours and practices and consider how things could be otherwise.

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