

Scarce resources: Conflict and sharing in discourse around primary school email use

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ABSTRACT

This paper discusses email use in a South African primary school. A conversation analysis of children's interactions around email activities challenges assumptions about the digital divide. This approach suggests the advantage to be gained by viewing the context of children's use of technology as a shifting set of communicative possibilities, rather than something that is determined solely by the physical presence or absence of computers. The paper describes how children negotiate and communicate around scarce resources in their environment. These scarce and shared resources are not limited to the physical equipment in the computer lab, but include the communicative possibilities offered by software and other individuals. This paper focuses on children sharing email addresses and using email's affordances of privacy to gain or avoid individual attention from the teacher. Discourse is treated as 'talk-in-interaction' and provides evidence of children managing the limited resources available to them.

Keywords: primary school; children; email; conversation analysis; discourse; ICTs; context

INTRODUCTION: EMAIL USE AND SOCIAL CONTEXT

7.5% of South Africans have access to the internet, and little over 2% of the population has access from home (Lewis 2007, p.200). Children's Internet access is more likely to occur at school than at home considering the influence of school connectivity projects.

In this paper, I will argue that children's interactions with ICTs, and particularly email, show them managing 'scarce resources' and negotiating and constructing a particular version of the classroom context as they do so. 'Scarce resources' are not limited to physical resources such as computers, but include communicative possibilities offered by software and other individuals.

Jones redefines Goffman's term '*Umwelt*', the German word for 'surround', more broadly as "an individual's environment of communicative possibilities" (2002, p.11). This is a helpful way to understand how scarce resources are shared and claimed by the children – the computers, teachers, software and usernames all have communicative possibilities. I use the word 'scarce' in the two senses of the word: (1) resources that are physically scarce such as computers and teachers; and (2) other representational resources in the environment with communicative possibilities that must also be shared (such as the usernames that the children use to log-in to computers).

In South Africa, even space may be considered a 'scarce resource'. Public hearings by the Human Rights Commission into violence in Western Cape schools acknowledged the extent to which inadequate resourcing of schools can affect children's educational experiences in the province. "Overcrowding in classrooms causes competition among children for physical space and resources" and "such a dynamic may exacerbate or even create hostility among learners" (SAHRC 2006, p.33). As a result of overcrowded classrooms, learners often receive little personal attention from their teachers. Similarly, in schools where computers are available, the

typical class size generally exceeds the number of computers in a teaching lab so children often share computers in their lessons.

Literature on the digital divide which foregrounds the presence of physical resources does not acknowledge additional factors such as space and turn-taking with computers. While press reports emphasize the competition and hostility associated with sharing resources, this is only part of the picture. This research project identifies the complex sharing practices which have evolved in these contexts: children often share the computers and other scarce resources and negotiate turn-taking to accommodate to the sharing of the computer. Their interactions and talk show them managing resources and negotiating context. The children's discourse reveals them sharing both physical and communicative resources, which are made salient in their discourse through conflict, collaboration and negotiation. Elsewhere, I discuss the way in which children use intricate turn-taking practices to share physical equipment – primarily the mouse and keyboard (Pallitt, 2008). This paper focuses on less obvious sharing practices which can be discerned in the children's interactions with their teacher via email.

This shift in emphasis challenges thinking in fields which over-emphasize the physical presence of resources such as computers when describing context. Digital divide literature¹ focuses on the scarcity of physical resources such as machines, bandwidth, and sometimes a lack of skills in ICT use. Warschauer (2002) has argued that "...a digital divide is marked not only by physical access to computers and connectivity, but also by access to the additional resources that allow people to use technology well." He also notes that "the original sense of the digital divide term—which attached overriding importance to the physical availability of computers and connectivity, rather than to issues of content, language, education, literacy, or community and social resources—is difficult to overcome" (2002). Thus, he suggests a continuum between the binary of the 'haves' and 'have-nots'.

In the Mountainside Primary² computer lab, there is only one computer for every two children in most classes. Consequently, children often share email addresses and sit together as they compose a message, even taking turns to use the mouse. Consequently, in this context, email use is less private³ and more of a public event. In this context, more than one person uses a software artifact designed for a single user. The result is that *users* then adapt their practices, negotiating how they use the software and at the same time being constrained by its design.

EMAIL IN THE CLASSROOM

Van der Meij (2004, pp.418-419) acknowledges previous studies which suggest that children from Dutch elementary schools use email to engage in conversation by exchanging stories of learning experiences, but notes that moments of dialogue as debate or inquiry were scarce. The focus in such research has been on how email dialogues can be used to support educational activities. A characteristic approach to email in the classroom focuses on learning content and classifying dialogues as being either 'on' or 'off task' (Van der Meij 2004, pp.419-420).

Some researchers may have been preoccupied with email as a tool for eLearning, and have thus far not appreciated email use as an event in and of itself. Few researchers have adopted conversation analysis to study email use. Van der Meij (2004, p.419) points out that communication needs to be analysed in greater detail in order to see how aspects of email use work together to create these dialogues.

METHODOLOGY

Studying talk empirically: Conversation analysis (CA), Computer-mediated discourse (CMD) and context⁴

CA is “a ‘microanalytic’ approach which takes apparently mundane and unremarkable spoken interactions and finds intricate patterning in the way they are organized” and “defamiliarizes what we normally take for granted” (Cameron 2001, p.89). Conversation analysts label their object of study as ‘talk-in-interaction’ (Cameron 2001, p.87). Doing a conversation analysis involves a certain relationship between talk and context: “the context is in part brought into being by the actions people produce” (Pomerantz and Fehr 1997, p.70). People’s actions can be studied on their own terms, rather than trying to fit them into an abstract theoretical framework which may have no relevance for them (Cameron 2001, p.88). For example, when studying email use at school, instead of categorizing children’s talk as being either ‘on’ or ‘off task’, one would need to pay attention to what is foregrounded by the talk and then build theory to make sense of the interaction instead of vice versa.

CMD is the “communication produced when human beings interact with one another by transmitting messages via networked computers” (Herring 2001, p.1). CMD is a specialization within the study of Computer-mediated communication (CMC), and is “distinguished by its focus on language and language use in computer networked environments, and by its use of methods of discourse analysis to address that focus” (Herring 2001, p.1). CA and CMD thus share an object of study – talk-in-interaction, or rather language-in-interaction – but whereas CA focuses mainly on verbal talk⁵ in a physical environment, CMD most often studies talk in virtual environments. CA and CMD differ with regards to the conceptualization of context, CMD (as a subset of CMC) often ignoring physical ‘context’. It is important that the problem of context in CMC be considered.

Jones (2002, pp.2-3) argues that linguistic studies of computer mediated communication have often conveniently avoided addressing the environments (both virtual and ‘actual’) in which such communication takes place, despite the importance accorded to the role of context in linguistics in recent years. He argues that CMC analysts restrict themselves to the analysis of decontextualized chat logs, email messages or Usenet postings and that such accounts of CMC leaves one with the impression that such interaction takes place in a virtual vacuum. There is “little connection to the material worlds of the people sitting in front of computer screens” (Jones 2002, p.3). Jones (2002, p.3) suggests that the physical circumstances in which CMC takes place can have important effects on how such interaction is conducted and the conduct of computer mediated interaction can have important effects on how physical activities in the material world play out.

For this study, I made use of conversation analysis within a multimodal discourse analysis (Jewitt 2006) because I analyse more than one mode of communication: verbal and written modes.

DATA COLLECTION

I spent eight days at Mountainside Primary’s computer laboratory over a period of three months. I observed five email activities, and once transcribed, these totaled little over one hour for all five. Email was used very seldom, and could be regarded as a marginal activity in the computer lab. The majority of the children’s lab time was spent on drill and practice grammar and maths exercises.

I collected data using a video camera and a small field-notes book for additional contextual information. Connected to the video camera was a pair of 'radio-microphones': one was attached to the camera and the other was placed between the learners behind the keyboard. Because talk was so important to this study, capturing the learners' voices was of vital importance. For ethical reasons, I did not attempt to record the learners' faces. I focused the camera on the computer screen to enable me to record the learners' actions with the mouse. The video footage was transcribed and collated with field-notes. The detail of transcription was tailored to suit the research question which is focused on talk in this current study, so recording the participants' voices together with what they were doing on the screen appeared to be sufficient. However some may argue that facial expressions should also be transcribed if one wishes to provide an accurate account of communication, since paralinguistic⁶ features of communication also play a role.

At the time of this recording, the learners and their teachers were accustomed to my presence, but not necessarily to that of the camera. When I recorded them I would say things like "I'm just recording what you're doing on the screen" and "May I see how you guys are playing at the computer?" and the learners that I observed seemed to welcome the attention and 'perform their skills'. This is partly because receiving attention from an adult is a scarce resource: children have to compete with their classmates for their teacher's attention. It should also be noted that cameras are more of an exotic object in this context than in other parts of the world. Recorded data reveals that children sometimes spoke about the radio microphone behind the keyboard, asking their partner what it is followed by debates about whether it was a speaker or a microphone. These interactions highlighted the novelty or 'exotic-ness' of the camera and related technical accessories in this environment.

ANALYSIS OF DATA

Although I made use of theoretical orientations from conversation analysis, I did not follow its transcription notation. I only used some of the conventions, those relevant to the research question, and I had to adjust the layout of the transcript to include columns. I used some of the conventions such as double brackets to signify non-verbal communication and I numbered the utterances – a practice so that one can refer to utterances as line-numbers when discussing turn-taking and coherence between turns to determine sequential patterns. Transcripts included numbered utterances and columns separating the user's speech from what they were typing or reading from the screen where relevant. This methodology is more akin to Jewitt's (2006) approach to multimodal discourse analysis.

I 'tailored' the sequences selected for analysis from the transcripts to make analysis easier and to promote readability and understanding of the interaction to the benefit of the reader. The analysis of sequences was informed by a practice in conversation analysis whereby one looks for participants orienting towards a specific aspect of context, highlighting or making something relevant or according it significance in their speech. Thus, I looked at what the children (and their teacher in the analysis) highlighted through talk-in-interaction. Analysis was informed by data firstly, and supported by a theoretical framework about the relationship between scarce resources and context: the idea that scarce resources in the environment, including computers, software and other people, offer communicative possibilities. These resources are shared, made salient through conflict or negotiated in discourse and children's 'talk-in-interaction' provides evidence of them managing scarce resources and thereby negotiating context.

THE INSTRUCTIONAL CONTEXT

This study is located at Mountainside Primary in the school's computer laboratory. When I first became acquainted with the school, during the start of 2007, ICTs had only been running in the school for two years. Therefore, this study is located in a broader context where a large majority of South African children had no access to computers at school until very recently (Walton 2007). The school has a fully-functioning computer lab and the principal reported that all the teachers were comfortable teaching with ICTs at the time of this research. As a physical context, the school is relatively well-resourced technologically: in addition to the computer laboratory with twenty-four student computers and a teachers' terminal, the school also has a sound laboratory and four interactive whiteboards which are not located in the lab.

EMAIL AND THE CULTURE OF THE CLASSROOM

The students rarely use email in the computer lab, as most of the time allocated to classes is spent on completing drill-and-practice exercises. Email is considered to be a 'non-event': it is not an assessed activity and the learners enjoy it because it is not framed by the teacher as 'school work'. The majority of the children share computers, working in pairs: it is a rare occasion when a child has the computer to him/herself. Using computers in this setting is a social and collaborative activity and sharing plays a very important and often undiscussed role in the everyday practices of this classroom.

The student computers are numbered one to twenty-four: each monitor has a sticker with a number which indicates the number of the computer. The children use this number as the username to log on to the computers and the password on all of the computers is '007'. For example, the children sitting at the computer numbered '21' will type "stud21" as the username and '007' as the password to log-on. The 'stud + computer number' usernames are also used for Pegasus Mail. The children can send emails within the class by sending the email to the numbers of their friends' computers. The 'stud-to-stud'⁷ system is mainly for the children in the lower grades who do not have their own usernames. Only from Grade four onwards do the children have access to personal usernames, since the younger children struggle to remember their usernames and passwords. The 'stud-to-stud' system makes logging in easier. When emailing, the lower grades use the 'stud-to-stud' system and the higher grades use their own usernames.

The use of personal versus anonymous usernames⁸ also offers insights into an interesting characteristic of children's email practices and how these form part of their classroom culture. These practices are highly public in nature, and although a personal username allows for a private communication it is transformed into a public practice in the lab because the children share the computers. Students in this context have to shift between the two identities depending on the username they use to log-in: anonymous student, one of many and individual student with his/her own name and personal log-in and password. The different log-ins also suggest different orientations towards the user. When logged in as 'stud' emails are made publically available in the lab: any student using the computer after one can read what one has written. When logged on with one's own username the emails are private and nobody else has access to them except if they have one's username and password.

Email use in this primary school challenges assumptions around privacy and emails. One may argue that even if a student is logged in on his/her own username, the literacy practices around emailing can also not be described as private because students work at the computers in pairs. Emailing becomes a collaborative endeavor despite the log-in which is used or who is being emailed. In most cases, the student doing the typing is the one with access to a relative or family member's email address and his/her partner provides verbal assistance in the process of textual

construction. However, emailing parents and relatives was a minority practice, as most children's parents did not have email access at home or work.

THE PARTICIPANTS

The subjects in the sequences analysed for the case study are Grade Five students (ten to eleven years old) emailing their teacher, Mr. Ernest⁹. Parents or relatives with Internet access or email addresses can also be considered as a scarce resource. It is likely that the teacher is aware of the fact that most children have nobody outside of the school to email, and therefore offers himself as a recipient to his students. The email activity reported on took place after a numeracy lesson where the students completed mathematics exercises using drill-and-practice software. In most classes, the learners have regular 'lab partners' and it can be assumed that most of the pairs are also friends: 'lab partners' were selected by the learners rather than by their teacher. However, in this particular session, the students were not allowed to sit next to their usual lab partners. Mr. Ernest instructs the boys to each sit at a computer and then he tells the girls to "choose a boy". The girls seemed quite embarrassed. Mr. Ernest tells the researcher that "I love mixing them up". This reorganization is not described for the purpose of appealing to evidence outside of the talk (Cameron 2001, p.87), but rather to 'set the scene' of the sequences subject to analysis.

CASE STUDY: 'TO SIR, WITH LOVE'

The analysis of the following sequences will show how privacy and the boundary between private and public are salient for both the teacher and his students in their practice of emailing – sharing emails involves a negotiation and conflict about emails considered to be private and those deemed public: to be shared with the class. The teacher plays an important role here with regards to the 'rules of seeing'¹⁰ because he discerns which messages will form part of class dialogue.

Mr. Ernest allows his Grade Five class (learners aged 10-11) to use Pegasus Mail after they have completed their mathematics exercises using drill-and-practice software. Mr. Ernest tells the class, "You can send to me if you like on stud eleven". He is seated at one of the student computers instead of at the teachers' terminal. In the first sequence, Mr. Ernest reads one of the emails he receives aloud:

- 1 Mr. Ernest: Ha ha ha ha ha
- 2 Sir we love you but please move Mark
- 3 love from Zhira
- 4 [class laughs
- 5 She wants Mark away from her
- 6 Zhira, Mark loves you too (much)
- 7 [class laughs
- 8 (Next time) I'll put Mark out of the classroom Zhira.

Mr. Ernest laughs aloud and reads the email which he has received from Zhira to the class. His amusement in line 1 comes across as a performance, followed by reading the email. Mr. Ernest is not only providing a reason for his amusement, but also sharing this 'amusing' (to him) email with the class. Mr. Ernest does not tell the class that he laughed because he received a funny email, nor does he reply to Zhira face-to-face or via email. Instead, he shares the message with the whole class suggesting that he regards it to be of public interest to the class rather than a private matter. It is clear that he addresses the class because their laughter is followed by an explanation

in line 5 that “She wants Mark away from her”. Mr. Ernest not only shares Zhira’s reason for emailing him with the class: his utterance also relies on the shared knowledge of the class about Mark’s behaviour and his reputation as a perhaps naughty and disruptive student. After sharing Zhira’s email with the class, he addresses her in line 6: “Zhira, Mark loves you too (much)”. He thereby puts Mark and Zhira in the role of a heterosexual romance for the entertainment of the class. Mr. Ernest’s utterance functions as a reason for why he cannot move Mark which is more of a joke: he provides Zhira with a reason while teasing her at the same time. Although Mr. Ernest was addressing Zhira, the class laughs in line 7. This suggests that although the utterance was directed at Zhira, the class found pleasure in Mr. Ernest teasing Zhira about Mark. In line 8 Mr. Ernest provides Zhira with the solution that he will put Mark outside of the classroom, but this solution could also function as an apology because Mr. Ernest realizes that he has embarrassed her enough and needs to close this conversation and direct the class’s attention away from the topic of ‘Zhira and Mark’.

This sequence shows how an email from a student to a teacher is made public in the classroom. One of the reasons for this is the asymmetrical power relations between the teacher and his students: he has the power to read emails aloud in class, whereas the students do not and the emails he receives from them are also subject to his decision about what information he can make public, and what he keeps private.

The next sequence occurs one-and-a-half minutes later. Mr. Ernest is seated reading the emails he has received. He does not reply to any of the student’s emails via email: he replies face-to-face or not at all. This sequence is transcribed as if the email messages are ‘speakers’ participating in a conversation with Mr. Ernest communicating using non-verbal activities, with Mr. Ernest’s actions on the left and the emails he reads on the right:

[Table 1: Mr. Ernest reading his emails from the class]

1	((Mr. Ernest looks at the screen, reading the emails resting his chin on his hand))	
2		((Subject: Why did you Sender: stud7))
3		((Message: sir why did u read it loud))
4	((Mr. Ernest clicks to read the next email))	
5		((Subject: none Sender: stud6))
6		((Message: sir plse move me))
7	((Mr. Ernest clicks to read the next email))	
8		((Subject: message Sender: stud12))
9		((Message: HEY.....SIR WATS UP? SIR YOU ARE THE BEST SIR EVER CAN YOU PLEASE BE OUR SIR AGAIN NEXT YEAR))
10	((Mr. Ernest clicks to read the next email))	
11		((Subject: we love u Sender: stud7))
12		((Message: sir we love you but plese move Mark love from zhira))
13	((Mr. Ernest mouses around the word ‘plese’, drawing the researcher’s attention to the spelling mistake))	

14	((Mr. Ernest clicks to read the next email))	
15		((Subject: you Sender: stud9))
16		((Message: why are you so dum))
17	((Mr. Ernest clicks to read the next email))	
18		((Subject: hello Sender: stud24))
19		((hi there sir I like you are the best this is from someone you know))

Mr. Ernest's body language while reading the emails suggests focus and curiosity: he is interested to know what kinds of messages the students have sent him. The subject to the email sent by a student in line 2 ('why did you') suggests that the student is unhappy with something that the teacher has done and would like a reason. Although the email is from 'stud7', an anonymous student, the identity of the student can be discerned from the subject of the email in line 2 and the message 'sir why did you read it loud' in line 3: the email comes from Zhira. She is clearly unhappy with Mr. Ernest for sharing her message with the class. One could possibly appeal to external evidence to further explain this interaction: Zhira is a Muslim girl and her resistance to the teacher's banter about a romantic relationship might constitute an additional reason for her resentment of her teacher's actions. However, one may also suggest that age is a factor in this interaction, as Zhira is in the age group where being teased about the possibility of a 'boyfriend' is highly embarrassing.

This utterance would probably not have been produced in a face-to-face situation: a student would be unlikely to question the teacher's actions because he/she is an authority figure. However, the email suggests that Zhira challenges the asymmetrical power relations between her and the teacher. When the students send an email to the teacher in this specific interaction, they are not sending it to a teacher as such, but rather to an anonymous student because of the log-in on the student computer that the teacher is using. This does not mean that they see their emails to their teacher in the same way as emails to their friends, or that they consider their teacher to be a student or friend, but the non-threatening (because it is not face-to-face) nature of email may have a certain democratizing effect. The notion of sending an email to the teacher does not encourage Zhira to align him with a student identity. In student-to-student emailing, an interaction like this would be quite normal because there is more equality between students (they all have anonymous student identities when using the 'stud' log-in system). However, this condition facilitates Zhira's expression of unhappiness with her teacher for reading her email aloud. Her message suggests that she is upset with him and did not expect or want him to share it with the class: she wanted Mr. Ernest to keep the message private. Her unhappiness also suggests that she intended her email to be considered as a private dialogue with her teacher, but from the sequences one is able to say that he did not interpret her email in the same way.

Similarly, the message in line 16 'why are you so dum' would also probably not be communicated between a student and a teacher during a face-to-face interaction: perhaps uttered by a teacher to a student, but unlikely visa-versa. This interaction also suggests that the anonymous student, 'stud9', understands the email space as one of more democratic power relationships because he/she has the power to insult the teacher. Once again, it is suggested that challenging asymmetrical power relations in this situation is permitted. However, the student could also be taking advantage of his/her anonymity¹¹, since there are two students sitting at the 'stud9' computer, so the teacher does not know exactly who the message came from.

Line 18 suggests that the sender of the email is known: 'stud24'. However, the message displaying a compliment and a student's adoration of the teacher in line 19 ends with 'this is from someone you know'. This suggests that the student wants his/her teacher to work out who sent him the message and at the same time it implies a sense of 'I am watching you, I know who you are but do you know who I am?' The student uses his/her anonymity as a device for play: working out his/her identity is intended to be a game between the teacher and the student, where the student is the one who has initiated the game. Asymmetrical power relations are challenged again because the student is the one who is asking the teacher a question (the notion of 'who am I?') and not the other way around. The student's message suggests playing a game with the teacher which relies on privacy and identity, and the student feels that he/she can initiate a game with the teacher because their identities, and thereby the power relations between them have become blurred by the stud-to-stud log-in system. However, the teacher does not want to play 'who am I' with the students. He does not email any of the students in return, denying them the personal attention they seem to be seeking.

CONCLUSION

This case study offers teachers, teacher-trainers and lab administrators a perspective to rethink their assumptions about children's email use at school. How children are represented by email software, especially when determined by different log-ins which are shared as in the case study, influences communication: log-ins can be considered as communicative resources and it forms part of children's email practices. This perspective challenges digital divide literature because the case study gives examples of 'scarce resources', such as a teacher's attention or shared student log-ins, which can be seen in addition to the computer as a 'scarce resource'. Access to 'scarce resources' with communicative possibilities is as important as the presence of computers or bandwidth.

The case study is revealing about classroom practices involving email. Emailing is not a prefigured activity: what the children are able to do is subject to constraints because of the way in which the lab is set up (deciding which log-in system to implement) and the type of activity (emailing the teacher or classmates, or whether they email someone outside of the school) plays a large role regarding the communicative possibilities of email.

When children use email at school, they are engaging in a set of social practices, but these practices go hand in hand with the communicative possibilities in their environment.

ENDNOTES

¹ Fink and Kenny (2003) suggest four possible interpretations of 'digital divide' which appear in the literature:

These are: "(1). A gap in access to use of ICTs—crudely measured by the number and spread of telephones or web-enabled computers, for instance. (2). A gap in the ability to use ICTs—measured by the skills base and the presence of numerous complimentary assets. (3). A gap in actual use—the minutes of telecommunications for various purposes, the number and time online of users, the number of Internet hosts, and the level of electronic commerce. (4). A gap in the impact of use—measured by financial and economic returns." (2003:2)

² Name of the school has been changed to preserve anonymity.

³ Emails, while perceived to be private, are in fact not private at all.

- ⁴ This discussion is relevant because “while nearly all linguists are in agreement as to the importance of ‘taking context into account’, there is substantial disagreement as to what should be counted as context and how it should be analyzed” (Jones, 2002:5).
- ⁵ CA has only recently acknowledged the multimodal nature of communication by incorporating paralinguistic aspects such as gestures and body language into analyses.
- ⁶ I tried to include paralinguistic features where possible, if I had access to them (i.e. if they were noted in my fieldnotes book along with contextual information).
- ⁷ Or ‘machine to machine’
- ⁸ These usernames can be considered as resources and ‘represented participants’, see introduction.
- ⁹ Name has been changed to preserve anonymity.
- ¹⁰ Rules of seeing’ are about “who can see what” (Walton, 2008:233). In this study it involves how users negotiate the ‘rules of seeing’ and it is suggested that those who act as gatekeepers (choosing to hide or display information), or those who model the ‘rules of seeing’ in the classroom such as the teacher, have more social power.
- ¹¹ This example is similar to online insults known as ‘flaming’ where an addressee is targeted with overtly hostile message content because social accountability is low (Herring, 2001:4).

REFERENCES

- Cameron, D. 2001. “*Sequence and structure: Conversation Analysis*” in *Working with Spoken Discourse*, Sage Publications, London.
- Fink, C. and Kenny, C.J. 2003. “*W(h)ither the digital divide?*”
- Herring, S. 2001. “*Computer-Mediated Discourse*” in *Handbook of Discourse Analysis* eds. Deborah Tannen, Deborah Schiffrin, and Heidi Hamilton, Blackwell, Oxford.
- Jewitt, C. 2006. “*Technology, literacy and learning: a multimodal approach*”, Routledge, London.
- Jones, R. 2002. “*The problem of context in Computer Mediated Communication*” A paper presented at the Georgetown Roundtable on Language and Linguistics March 7-9 2002
- Kress, G.R. and Van Leeuwen, T. 1996. “*Reading images: the grammar of visual design*”, Routledge, London.
- Lewis, C. 2007. “*South Africa*,” *Global Information Society Watch*, pp.198-206.
- Pallitt, N. (2008). “*Children’s discourse patterns and literacy software: A case study of software in use*”. MA thesis University of Cape Town, Cape Town.

Pomerantz, A. and Fehr, B.J. 1997. "Conversation Analysis: An approach to the study of social action as sense making practices", *Discourse as Social Interaction* ed. Teun A. Van Dijk, Sage Publications, London.

South African Human Rights Commission. 2006. "Report of the public hearing on school-based violence" Available: http://www.sahrc.org.za/sahrc_cms/publish/cat_index_26.shtml [24 March 2008].

Van der Meij, H.; de Vries, B.; Boersma, K.; Pieters, J.; Wegerif, R. 2004. "An examination of interactional coherence in email use in elementary school", *Computers in Human Behavior*, 21 (2005):417-439.

Voida, A. & Mynatt, E. 2006. "Challenges in the analysis of multimodal messaging". *CSCW'06*, November 4–8, 2006, Banff, Alberta, Canada.

Walton, M. (2008). "Semiotic machines: Software in discourse". PhD thesis University of Cape Town, Cape Town.

Walton, M. (2007). "Cheating literacy: The limitations of simulated classroom discourse in educational software for children" in *Language an Education*, 21(3), pp. 197- 215.

Warschauer, M. (2002). "Reconceptualizing the Digital Divide." *First Monday*, Vol. 7(7). Available at <http://firstmonday.org/htbin/cgiwrap/bin/ojs/index.php/fm/article/view/967/888>. Retrieved 09 September 2009.

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