

Computer-mediated communication: A new pedagogical space?

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ABSTRACT

This paper examines the potential of computer-mediated communication as a teaching and learning space, both for writing and for students to discuss material and ideas and work collaboratively. Amongst the issues discussed are why electronic communication may affect and reflect educational settings and the characteristics of electronic written discourse and the implications of these for learning.

Increasingly communication is electronic and relies on the written word. Computer-mediated communication refers to a technology which assists people to communicate with one another. It can take different forms including e-mail, bulletin-boards, lists and forums. It can be synchronous or, more frequently, asynchronous. If synchronous, the communication is often called interactive written discourse, a text format with real time interaction pressures. While the various forms of computer-mediated communication differ, they have in common the fact that they require written communication using a keyboard; messages are rendered in text (or graphics formed from text); there are no para linguistic cues; participants can be widely separated and, generally, it is not necessary to know the identity of participants.

The use of technology in education has been influenced by changes in theories of how knowledge is constructed or how learning takes place. For example, with respect to writing, Eldred (1991) argues that the technology used in our classrooms has reflected changing ideas about teaching writing. Arising from more general socio-cognitive and socio-cultural theories of language has been a view of meaning as negotiated, texts as socially constructed and writing as knowledge creating. A view of knowledge as made, not found, is one which lends itself to the idea of obtaining multiple perspectives. Electronic conferencing well illustrates the communal nature of text construction and dissemination, much as word processing reinforced the idea that text is fluid and dynamic (Hawisher, 1992).

The aim of this paper is to investigate the potential of computer-mediated communication (CMC) for aspects of teaching and learning. Clearly, computer-mediated communication has possibilities for electronic course delivery and distance learning in general. More specifically, it appears to have possibilities as a teaching and learning space, both for writing and for students to discuss material and ideas and to work collaboratively. It is this aspect the paper will focus on, in order, as Hawisher and Selfe (1991) suggest, to help understand more fully how technology reflects and affects the environments in which we teach.

There are a number of suggestions as to why electronic communication may affect and reflect instructional settings and outcomes. At the most general level, it is argued that electronic

communication is associated with quantitatively and qualitatively different levels of participation by students. In terms of sheer amount, there is evidence that student participation increases in electronic conferences and a greater number of students take part than do in traditional classrooms (Harasim, 1989) and using CMC they interact more with their teachers and with other students than face to face (Hartman, Neuwirth, Kiesler, Sproull, Cochran Palmquist & Zubrow, 1991). This effect was more pronounced for the less able students.

There are several suggestions as to why this should be so. One is that the electronic medium levels out the inequities produced by gender, class, ethnicity and personality differences in normal classrooms and, thus, encourages all group members to participate. Research shows ' however, that gender equalisation does not happen just because CMC is used (Selfe & Meyer, 1991). The reduction in obvious social cues for CMC participants, additionally absorbed by the nature of the task, has been taken to imply that they were less aware of others and less regulated by self or social norms. This would appear to be a logical explanation for flaming or the excessive use of emotive language and insults which have been reported to occur in electronic exchanges (e.g. Kremers, 1988). There are several problems with this explanation of participation. As Eldred (1991) notes, although it is possible for students to adopt different voices from their own, to a large extent they carry their classroom roles with them 'on-line'. Similarly, by their actions, teachers may reinforce perceptions of them as in control, monitoring and inspecting the contributions made to electronic discussions. Students may find it difficult to drop the student role when they are aware of the teacher observing their conversations and this may shape both their behaviour and their prose in socially and educationally appropriate ways (Hawisher & Selfe, 1991). Further, as Eldred & Hawisher (1995) rightly point out, this argument of reduced social cues encouraging participation is premised on an uncritical acceptance of findings from early social psychological research concerning the effect of their absence (e.g. Kiesler, Siegel & McGuire, 1984), findings which themselves are contradictory. In some research users are seen as individuals lacking in self awareness or users self absorbed but essentially detached from others and associated social norms. They are absorbed in the task. Other researchers (e.g. Lea & Spears, 1991), argue that CMC users have heightened awareness of social context, an argument which will be revisited when considering the idea of community and audience. On closer examination, the equalisation phenomena stemming from the non-communication of contextual cues as to status, power and prestige, may only have limited use in explaining the impetus for participation, in electronic communication.

Such an argument does not take into account the fact that electronic communication centrally involves language and students bring with them the outcomes of and the ongoing processes of language socialisation. Students have extensive language experience, language which not only has social nuances which carry identity cues but language that has been used to define a community identity. Some argue, that because electronic discourse is more like speaking that participation will be facilitated (Thompson, 1988, cited in Eldred & Hawisher, 1995), particularly for children or less expert writers who can draw on the known rather than struggle to write in some genre which does not allow them to use the language they already possess (Hall, 1994). Furthermore, in CMC, Batson (1988) argues 'teachers and students aren't required to move away from the genuine "feel" of their face to face oral exchanges and into a seemingly more contrived solo writing exercise' (p. 32). Electronic discourse has been described as a hybrid language, somewhere between talking and writing. 'Located between the technology of the typewriter and the telephone, electronic discourse in all its forms shares features of written and spoken discourse, yet resists definition as either "speech" or "writing"' (Eldred & Fortune, 1992: 61). Although it is common in the literature to speak of synchronous conferencing as computer conversation ('chat' or 'net-talk') and asynchronous conferencing which takes place via bulletin boards or e-mail as written communication, Eldred and Fortune caution against reinforcing the politics of the orality/literacy model but, rather, favour regarding the types of CMC as forming a somewhat unstable continuum.

Electronic text is a little documented form of written communication according to Ferrara, Brunner and Whittemore (1991) who draw on the idea of register (defined as a variety of language



according to use, that is the structural properties follow from the circumstances of use) to help explain electronic communication. Previously it was assumed that the context of use in written communication was 'eventual, non concurrent with the production of discourse, as it is in spoken language' (Nystrand, 1987: 205). But electronic communication, particularly synchronous, involves interaction, rapid feedback and co-present audiences. The conclusions of Ferrara et al were that interactive written discourse is a naturally occurring reduced register; a hybrid language variety displaying characteristics of both speech and writing. Similarly, Taylor (1992), says electronic messages show an interesting mix of spoken and written language features. Taylor (1992) analysed messages sent by students in terms of lexical density, clausal complexity, thematic emphasis, and the representation of processes. He also analysed students' writing when discussing ideas for a piece via synchronous conferencing and, comparing this with the writing of the final piece, found there was a consistent difference. Bartholomae's (1993) comparison of essays written on ENFI (electronic networks for interaction) with non-ENFI essays showed ENFI essays as 'less formal, more colloquial, less predictable, more individualised, less likely to present themselves as text, and more likely to imagine a direct form of address' (p.240).

The register, Ferrara and colleagues suggest, comes about because people, confronted by a new situation, draw on previous knowledge of partially similar activities, creating new, appropriate language varieties out of existing ones. They see interactive written discourse (IWD) as forged out of postcardese, headlines and telegraphese. So IWD features omissions, contractions, disfluencies or false starts, informal spellings and punctuation, like dashes to signify ellipsis or parentheses to compensate for the lack of linguistic cues. Wilkins (1991) discussed how electronic writers used various strategies and conventions to signal that they wanted to introduce a new topic or issue; to designate the message being responded to and to maintain the topic. When electronic communication is synchronous, it is like notetaking in that it has real time processing constraints although it differs from notetaking in that it is interactive including the potential for feedback. It is both edited and interactive. Computer conferences may be evolving into a new genre or a collection of related genre.

Like other discourses, the norms governing electronic discourse have to be acquired. The rules are set by communities of use (Ferrara et al., 1991) and those wishing to enter may find it frustrating. Within the community of users, there is evidence of hierarchies forming whereby experienced computer users 'pull rank over novices, tossing out computer jargon ...' (Eldred, 1991: 54). A recent study (Parr, 1997) suggests that experts and novices participate and profit differentially from on-line electronic discussion. The novices in this study brought their previous knowledge of a discourse community, largely that of academic writing, to the new context. They responded in synchronous communication formally, as if responding to the letter of an unknown enquirer. It seems that, as novices, these students identified themselves as members of a group with certain values and goals and this influenced their approach to the task, the resultant interchanges and the more expert group's view of them. The experience of these novices suggests that the dynamics of classroom discourse may still operate but in changed form but one which still requires appreciation of the unwritten rules and routines of interaction to participate. The norms may even be more difficult to recognise in a new context. According to Eldred (1991), students accustomed to listen rather than talk, will read. instead of writing. And as Dawn Rodrigues (1989) points out, students are not accustomed to interacting with others in what is akin to continual oral discussion which involves tracking ideas and synthesising what others have said while, at the same time, attempting to find their own voice. As a result, they may find participation difficult. Conferencing can lead to sensory overload - there are different perspectives from many participants, often on several issues and they can appear on the screen rapidly (although some systems allow one to 'hold' the scrolling messages on the screen so that one can stay with an old discussion to better follow or make sense of it in order to respond). Students can be overwhelmed and choose not to participate or to participate minimally. They may also decide not to participate because of what Feenberg (1987) calls communication anxiety where receiving response to a comment (whether your comment was

important or interesting enough to respond to) is generally signified as success and receiving no response is seen as failure. Clearly, a number of different features, other than simply relative anonymity, influence the extent and certain features of participation by students in electronic communication.

The second aspect of participation, the qualitative features of this participation, have also received attention. Different theoretical frames have been employed to examine and explain them. Words like absorption and engrossment are used to describe students' behaviour as they conference (Feenberg, 1987). An analysis of discourse (Ferrara et al., 1991; Murray, 1991) showed features which indicate involvement like frequent use of adverbs and direct questions. Other measures of engagement include amount generated (Schriner & Rice, 1989). This absorption may be a by-product of the medium, including the necessity for concentration to follow interchanges in synchronous communication. Or the explanation may be social in that students are motivated to participate by other features of the medium like its ability to link people, provide access to information and carry written messages. The total immersion in text necessary to communicate electronically, particularly in real time conferencing, is hypothesised to contribute to an improvement in student writing. Batson (1993) reports pre- to post- test improvement for his network writers. An additional explanation may be that electronic conferencing helps develop facility with written language because students write more than they usually do and it is low pressure practice which makes them more confident in their ability to express themselves in writing (Bump, 1990).

In the concept of authentic activity, and of audience, is a possible logical explanation for both the extent and level of participation by students in electronic communication. Electronic communication offers real reasons for authorship, reasons to write and the hook is getting replies - genuine, meaningful replies (Hall, 1994). Electronic communication can provide not only real audiences but different audience/writer combinations, that is the exchange can be one to one, one to many or many to many. Some electronic conferencing, often asynchronous, simply develops a sense of community (Selfe & Meyer, 1991). E-mail can support the process of reflective conversation (Russell & Cohen, 1997), a process more powerful than journaling as it involves someone else and has the advantage of both spontaneity where one can write as if one were talking and a self determined delay in response, together with the option of a permanent record to use for further reflection. 'It is easier for me to tell it to someone rather than just write for myself. I can print these <e-mail letters> and analyse them' (Russell & Cohen, 1997: 4). There is the possibility to carry through a conversation over several interactions by including the previous response and weaving new material in.

Electronic technology supports a range of collaborative writing practices, including the exchange of drafts - mutual gifts of text, followed by mutual gifts of comments (Rimmershaw, 1992). Since the dominant educational model which viewed writing as a solitary activity was challenged by the work of Janet Emig (1981), many teachers have worked towards students learning to write in collaboration with others and have employed technology in various ways. Electronic mail or a web page can inform students about assignments; can be used to send comments to individuals and communicate outside class time. Sharing of written pieces and of information and ideas can also be accomplished through file sharing or posting on a bulletin board or through synchronous conferencing. There are opportunities for joint knowledge building and collaboration. In electronic discourse, the emphasis shifts from the individual as part of a discourse tradition to the idea of participating in a community of discourse which creates its own collective meaning. The term 'group knowledge' has been coined to describe the textual contributions of a networked class (Barker & Kemp, 1990). Mason and Kaye (1989) call this 'mindweave' where the ideas of many are brought together into a community of knowledge, a hallmark of social constructivism. Electronic conferences offer the opportunity to bring together multiple perspectives, fostering an openness to other discourses. Students find they can create and participate in different discourse communities.

There is the possibility of a real audience beyond the teacher and there is the possibility of different dynamics. Electronic conferences can lead to a decrease in teacher or leader led discussion and a disruption in the traditional pedagogical arrangements. It can change interaction patterns by removing verticality, the basic communication dynamic of the traditional classroom. There is greater opportunity for participation by students as pause time is more sustainable because the teacher is less tempted to 'jump in' as in face to face class discussions where teachers seldom wait more than three seconds for a response (Batson, 1993). Thus, students take responsibility for the evolving text. However, practices need to be critically examined because while on-line exchanges can help teachers to create new and engaging forms for learning, they can also operate to diminish the opportunities for exchanges, action and engagement.

Educators need to think 'critically and carefully about technology (to) succeed in using it to improve the educational spaces we inhabit' (Hawisher & Selfe, 1991: 64). Multiple factors - the institution, the teacher's experience, goals and beliefs, the students, the technology and the resources all impinge on how a particular innovation like CMC is realised (Bruce, 1993). The same technology can take various shapes in different contexts. Computer-mediated communication has the possibility of the creation of a written social context, an online discourse community with new opportunities for effective instruction in writing, effective collaboration and discussion. Theory suggests that students learn more effectively through active participation in authentic tasks and CMC can facilitate this. Students can interact with heterogeneous audiences (Hartman et al., 1991) and they have a reason to write. Discussion can be freed from the basic dynamic of the traditional classroom. Electronic communication presents educators, as Batson (1988) suggests, with an opportunity to create an entirely new pedagogical space.

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