COMPUTER MEDIATED COMMUNICATION FOR LEARNING AND TEACHING: AN ANALYSIS

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Abstract

By giving us greater control over information, we, as teachers and learners, can be released from many of the daily mundane tasks in order to pursue more complex tasks, by using the computer as an analytical and synthetic medium. Yet, ironically, this leads many of us to see computer technology as a threat. Many of us who have spent our lives with face-to-face education have a similar view towards the computer, as did my grandmother to the telephone. She wouldn't speak to anyone she couldn't see. In this paper we examine the relationship between computer-mediated-communication (c-m-c) and teaching/learning. We identify the strengths and weaknesses of asynchronous c-m-c, reflect on the relationships of students learning via computer mediation, and conclude with pedagogical insights as to the value of electronic, asynchronous communication.

Keywords

Educational technology, tertiary education, computer mediation, asynchronous communication, pedagogy

1. INTRODUCTION

Representational formats of the previous 5,000 years have been digitalised. By giving us greater control over information, we can be released to pursue more complex tasks, using the computer as an analytical and synthetic medium [24]. Yet, ironically, these phenomena lead many of us to see computer technology as a threat. Many of us who have spent our lives with face-to-face education have a similar view towards the computer, as did my grandmother to the telephone. She wouldn't speak to anyone she couldn't see.

Ahern and El-Hindi provided us with an important analytical case study of computer-mediated discussion from the perspective of teacher/facilitators when they argued [1], “implementing a change from the traditional classroom to one that values collaborative discourse in not simple”. Admittedly, there are those who take an extremely optimistic view seeing the end of classroom pedagogy and the professoriate, as aspiring students sit at home logging on and gathering whatever information that is required to suit their own learning purposes [5] [18]. This, as might be expected is strongly challenged by a strongly asserted pessimistic view providing a view of the online Big Mac Degree providing second rate information to isolated students who are ill-prepared to either use it or understand it [25].

In this paper a guarded optimistic view is taken that recognises the usefulness but accepts the caveats of computer-mediation in teaching/learning. The sections to follow begin with the consideration of computer technology and teaching/learning. We then proceed to identify the strengths and weaknesses of computer-mediated-communication as outlined in the literature. This is followed by reflections on participation, finishing with a summary that reviews the pedagogical insights gained from teaching/learning with computers and the value of electronic, asynchronous communication. The definition of computer-mediated-learning used herein, provided by Edwards and Clear [10], refers to “any form of interpersonal communication that uses some form of technology to transmit, store, annotate, or present information, created by one or more participants”.

2. COMPUTER TECHNOLOGY AND TEACHING/LEARNING

Much of the published literature has focused on the benefits of the computer for instructional applications. These include quick and remote access to information and instruction, convenience,
adaptability to change, speed of communication, the ability to reach large audiences, instant feedback, facilitation of group work, and cost savings [15] [28]. On the other hand, a significant literature, particularly amongst academic psychologists questions the expense and purpose of developing computer-based learning. Some question whether the potential increment in student learning is worth the time and trouble involved. Many authors have anecdotally discussed some of the shortcomings and obstacles of embracing the Internet in higher education settings. Such problems include lack of privacy issues, poor or limited interactions, technological difficulties (e.g., server failure, overloaded circuits, "dead" links), software limitations, increased time commitment (of faculty), limited faculty knowledge, training and support, technological rather than content focus, isolation, and archival/retrieval concerns [9] [17] [33].

Does computer technology simply allow us to achieve old goals more efficiently? Or can (should) it be used in a self-conscious manner to construct a social environment with a new morphology of interpersonal communication? The historically conditioned forms of activity mediated through computers must be studied for the qualitatively distinctive forms of interaction that these artefacts afford and the social arrangements that they help to constitute. One needs to consider the ‘effects’ of interacting in this medium in the entire system of social relations of which they are a part [31]. All of which begs the question: What are the strengths and weaknesses of computer-mediated-communication?

3. STRENGTHS AND WEAKNESSES OF COMPUTER-MEDIATED-COMMUNICATION

3.1 Strengths

• The ability to think, study, participate and initiate conversation without the restrictions of time or place [4] [23].

• The ability for reflection and thoughtful, asynchronous negotiation of meaning between members of a large group [7] [21]. This potential for collaboration is what connects computer-mediated-communication to constructivist pedagogy [20].

• Conversations may be archived for future reference including the ability to re-visit the full context of a topic [23].

• The potential exists for greater equality of participation within the group given the reduction in recognisable, economic, social, and racial or gender distinction [11].

3.2 Weaknesses

• The ubiquitous complaint about lack of face-to-face contact, resulting in the loss of phatic functions that provide reassurance to both the speaker and listener [12].

• Most of the messages are instructive rather than constructive or collaborative. This is probably not a weakness so much as a hurdle that must be leaped by all in the interest of "community".

• Although electronic fora efficiently link those in need of information with those that have it [8], the lack of sustained high-quality participation in fora discussion has been examined and seen to be a regularised phenomenon [34]. The "experience" [7], buttressed by personal involvement, is that there is no "rational" [13] [23] reason for someone to participate when they can "free ride" and enjoy the contributions of others, unless they have some altruistic concern about the survival of the forum. The relevant prediction is that message contributions will be generally undersupplied in all fora [29]. Therefore, both intuitively and experientially, "lurking" should come as no surprise.

4. FURTHER REFLECTIONS ON MEDIATED COMMUNICATION
Reflection, although removed from the immediacy of the experience, leads one to thinking about other issues of immediate concern, that may be considered neither a strength nor weakness of the communicative mode.

- While phatic mistakes are often made in face-to-face communication, one must take particular care not to offend other participants online, given the lack of symbolic or semiotic attributes (facial expressions, gestures, etc.) in computer-mediated-communication.

- From a ‘constructivist’ perspective, the exchange of text-based messages seemingly encourages ‘active’ [16] and ‘self-directed’ [23] learning since interaction is dependent on participants accessing the network frequently to follow conferences, read and comment on messages by others, and compose and submit their own contributions to conferences. Yet, even online there appears to be a carry-over from the classroom environment where all the students are facing forward towards the “sage on the stage”.

- Techno-frustration must be confronted. “Newcomers” easily become frustrated and fearful when the technology or administration isn’t just right. Those who have used computers develop a stronger sense of fatalism or a greater degree of patience, as well as the ability to think laterally about the technological problems that arise. But the numerous statements made by students suggesting sheer exasperation and a need for reassurance must be acknowledged.

- Mark Twain pithily identified the underlying constituent of ego involvement in discourse when he said: "It is better to keep your mouth closed and let people think you are a fool than to open it and remove all doubt." In any case, “lurking”, a subject that has been well documented in the literature, is a continual frustration for an online facilitator. Even when the entire course depends on participation, both to make it work, and in terms of assessment, "lurking" remains.

- Is the classroom experience one in which students are maximising their individual propensities for learning; or is the classroom a group-based, collaborative experience for mutual and collective dialogue and interaction?

- Clearly, interactive discussion is effective in assisting the learning process [6]. But it is vital not to be too active or "dominant" in conversational participation [13]. Herring, et. al [19] argue that men attempt to dominate computer-mediated interaction in much the same way they dominate F2F interaction: by “talking” more, taking authoritative stances in public discourse and intimidating women into accommodation or silence.

- The claim is regularly made in the literature that virtual interaction equalises communication based on the assumption that status and gender cues are de-contextualized by the hypertext medium [14]. This does not appear to be entirely the case as shown in the research of Herring, et.al [19] into the defined features of men’s and women’s language on the basis of specific rhetorical styles ‘conventionally’ associated with each gender.

- As Senge puts it, the success of any discussion depends "on the way a topic is developed systematically “which leads to the collective nature of thought” [32]. For a discussion to be effective, each member of the group must be able to establish common ground in the discussion.

5. SUMMARY

Computer technology unarguably increases access to education. Computer-mediated-communication is not meant to replace face-to-face communication. But like it or not it already has, and increasingly will, displace it. Although trite, it remains necessary to reiterate that no technological medium, on its own account, is likely to improve education in a significant way if only used to deliver information. The key to promoting improved learning with computer technology depends on how effectively the medium is exploited in the teaching and learning situation [35]. Whether or not computer-mediated discussions are richer and more thoughtful depends more on knowledgeable social facilitation with respect to goals and process, than it depends on the technology [30] [22]. Academics are not removed from the educational
process by computer technology. Their role simply shifts away from being deliverers of information to being guides and creators of learning experiences [26], transforming both the classroom and education experience.

The major characteristics of computer-mediated-communication and learning are the time and place independence, hyperlinking, and interactivity among various combinations of individuals [2] [36]. According to Papert [27] the computer is particularly compatible with the way students now prefer to learn. The very 'interactivity' of discussion suggests that by providing relative anonymity and reduced personal identification, computer-mediated-communication may be more 'humanising' [37].

Indicatively, the process of knowing requires significant effort on the part of both teachers and learners. The real issue is how to integrate the personal qualities of great teaching with the technological advantages of learning by computer [3]. Online education offers more than convenience. For all the mythology of the classroom, many students show up and snooze rather than learn. The computer forces students to focus and to be active participants in learning rather than empty vessels into which academics try to pour their knowledge. It's very easy to attend a face-to-face class physically, yet not really be there mentally. However, without the necessary reflection, overzealous adoption of computer technology will not of itself strengthen the teaching/learning process.

References


