Chapter 1.24
Computer–Mediated Communication in Virtual Learning Communities

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THE MEANING OF CMC

Computer-mediated communication (CMC) can be simply defined as "communication that takes place between human beings via the instrumentality of computers" (Herring, 1996, p. 1) and the technology used in CMC as "media that facilitate the exchange of semantic content, transmitted through telecommunication networks, processed through one or more computers, between individuals and among groups" (Rice, 1984, p. 438). As a concomitant result of the widespread use of computers and the Internet in the curriculum of higher education as well as the inclusion of various forms of online learning, CMC has become a common communication modality in teaching and learning contexts. Although all forms of CMC can be meaningfully integrated into learning contexts, the majority of CMC at present is nevertheless text based and hence the focus of this contribution.

CMC plays a pivotal role in the context of e-learning models in higher education that offer students new forms of learning that would not be possible in a traditional classroom environment. Cooperative and collaborative learning, problem-oriented and project-based learning, as well as authentic learning in which real-world scenarios are simulated, are some examples. In the context of these types of e-learning models, virtual learning communities as well as smaller virtual teams are often an essential component. The learning objectives of these models are manifold, but they generally include offering students the opportunity to acquire, practice and enhance important key competencies required in their future professional work. Hence, communication and media skills as well as the ability to work cooperatively

in a virtual team are just as important as the actual subject matter of the course itself.

CHARACTERISTICS OF CMC

CMC can be classified into two major groups: asynchronous and synchronous CMC. The main difference between these two types is temporal: asynchronous CMC is time independent, that is, it does not require that the communication partners be simultaneously online, whereas synchronous CMC takes place in real time or quasi real time, requiring the telepresence of the communication partners. E-mail, mailing lists, and discussion forums are examples of asynchronous forms. Chat rooms and shared whiteboards represent synchronous forms of CMC.

A further classification of CMC is whether it represents a one-to-one (1:1), one-to-many (1:n) or many-to-many (n:n) communication form. Depending on their use, the different types of CMC can fall into more than one category, for example, e-mail and chat can represent both 1:1 and n:n communication. A topic of interest in this context is the double function CMC can have: It can be used for individual communication, but also for mass communication. This goes along with a double function that is very interesting in a learning setting, for example, in higher education. E-mail messages and discussion forum postings can simultaneously fulfill two successive functions: (1) interpersonal communication between two or more participants and subsequently (2) serve as an information pool for other participants. Chats that have a protocol option can also be used as an information pool for passive students. Fritsch (1998) coined the term *witness learning* to describe the indirect learning possibilities of learners who do not actively take part in interactions, but learn from witnessing the interactions of others. In virtual learning environments, participants have ranked "witnessing" (i.e., reading) the interactions

of others high among the things they have learned from (Fritsch, 1998; Link, 2002).

As text-based CMC is not realized face-to-face but mediated via computers, the communication partners cannot directly experience nonverbal signals (e.g., facial expressions or gestures) or paraverbal signals (e.g., voice volume and tone). In practice, nonverbal and paraverbal signals are often compensated for by emoticons, inflectives, and other expressions created by entering characters on the keyboard.

Many studies, particularly those from a linguistic perspective, have investigated the style participants use in communicating. The most often noted phenomenon is no doubt the use of colloquial language in chat, e-mail, and even in discussion forums. This phenomenon is often accompanied by unconventional orthography, spelling and grammar errors, as well as slang expressions. Furthermore, the communication is influenced by a register embracing word creations taken from the language of computer hackers. If the model of Koch and Österreicher (1994) is applied to CMC, it becomes apparent that the linguistic characteristics of this type of written communication cannot simply be classified as totally oral or totally written: Here it is helpful to differentiate between the concept and medium of spoken and written language. Considering the communication style of CMC, it must be regarded as a hybrid language variety, displaying characteristics of both spoken and written language. As its usage norms are becoming conventionalised, some authors venture to propose that this communication style represents a new type of language which they refer to as netspeak or cybertalk, which cannot be compared to conventional communication (e.g., Crystal, 2001).

Studies with a focus on work-flow analysis often examine CMC as to its impact on the effectiveness of communication in professional contexts as well as on the dependency between communication style and the roles of the commu-

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