Computer-Mediated-Communication and Foreign Language Education

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Since the early 1990s, the increasing availability of the computer and the advent of the Internet have led to a new form of communication which helps overcome the limits of time and space, namely that which researchers and scholars refer to as Computer-Mediated-Communication (CMC). The aim of this paper is to provide a brief description of CMC, its distinctive features and its potential benefits for foreign language learning. The paper begins with a brief historic perspective on CMC in relation to Computer-Assisted Language Learning (CALL) practices and Network-Based Language Teaching (NBLT), i.e. language teaching activities carried out by means of local or global communication networks. It then looks at the potential benefits of CMC in foreign language education.

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1 Introduction

An often-cited definition of Computer-Mediated-Communication is that provided by Susan Herring (1996, p. 1), according to whom CMC is «communication that takes place between human beings via the instrumentality of computers». A more exhaustive picture of CMC is offered by Trentin and Benigno (1997, p. 32), who posit that Computer-Mediated-Communication embraces «all those activities in which the computer is used for distance communication: access to and transfer of information, thematic conferencing via e-mail, audio- and video communication, etc. ».

Originally, CMC involved tools such as electronic mail (email), online discussion forums and synchronous text chat; yet, with the rapid growth of Web 2.0[1], today's CMC also comprises communication by means of more interactive and participatory multimedia tools – a vast number of which are open resources – which include wikis, blogs, videoconferencing systems (e.g. Skype[2]), photo- and videosharing applications such as Flickr[3] and YouTube[4], virtual worlds (e.g. Second Life[5]), online gaming environments (e.g. World of Warcraft[6]), social networks such as Facebook[7] and MySpace[8], and a growing number of mobile phone applications, many of which «have little to do with what has been conventionally referred to as a computer» (Thorne, 2007, p. 442 - italics in the original)[9]. Despite their different purposes and contexts of use, all these tools offer a convenient and quick way for users to come into contact, share information and, in the case of Web 2.0, produce and transform content with other online users, regardless of their geographic location (albeit, as Thorne observes, «completely dependent on access to the appropriate technologies» - 2010, p. 139).

In 1997, Warschauer identified the nature of CMC in a series of features, which differentiate it from other forms of communication, including face-to-face interaction, and which are still valid today in the Web 2.0 era. In his words, CMC has the unique characteristic of merging both «the interactional and reflective aspects of language» (1997, p. 472) in a single medium since online users can now socialize, interact, exchange ideas as well as share, store,

[1] The term 'Web 2.0' (O'Reilly, 2005) refers to a set of principles and online practices in which collaboration, sharing, and 'bottom-up' production and transformation of content are opposed to the sole fruition or ready-available online resources.

[2] http://www.skype.com

[3] http://www.flickr.com/

[4] http://www.youtube.com/

[5] http://secondlife.com/

[6] http://us.battle.net/wow/en/

[7] http://www.facebook.com

[8] http://www.myspace.com

[9] For a more extensive review of CMC tools, with a particular focus on Web 2.0 resources, see Thorne (2007) and Guth and Thomas (2010).

revise and edit content by means of written or spoken CMC. In addition, CMC allows for many-to-many interaction, thus potentially offering more egalitarian and less intimidating ways for interaction than in face-to-face communication (*Ibidem*, p. 473). A further feature of CMC is the fact that it can count on space-independency: thanks to the computer and the Internet, people no longer have to be in the same place, but can access information and/or interact with one another, in the case of synchronous communication, from anywhere. Considering that, in the asynchronous mode (e.g. emails), CMC also allows for time-independency, and therefore makes a total «separation of time and space» (Giddens, 1991, p. 20) possible, the added value and potential of this form of communication emerge with even more clarity. Finally, CMC «allows multimedia documents to be published and distributed via links among computers around the world» (Warschauer, 1997, p. 476): this means that online users now have the chance to access a larger amount of information in the form of multimedia, and to navigate between multimedia resources through hypertext navigation systems. Besides surfing the Web, users of CMC environments are now able to produce and share their own multimedia documents, thus participating in the construction of the knowledge stored and made available online. This requires users to develop and activate what Lankshear and Knobel call «new online literacies» (2006), in other words the ability to master the potential of online artefacts so as to create, evaluate and share content while at the same time negotiating and respecting the conventions of online communication.

In the context of foreign language education, CMC has brought about a «shift in L2 education, one that moves learners away from simulated classroom-based contexts and toward actual interaction with expert speakers of the language they are study¬ing» (Thorne, 2007, p. 424). In this sense, CMC has rapidly exploited the opportunities for communication to potentially enhance learning opportunities. In 1999, before the advent of Web 2.0 and widespread broadband access, Kramsch and Andersen (1999, p. 31) commented that computers and the Internet «seem to realize the dream of every language teacher--to bring the language and culture as close and as authentically as possible to students in the classroom». Salaberry remarks (1996, p. 22) that the revolution that new Web-based technologies have brought about in the language classroom is not rooted in «the nature of the technological medium per se», but in the new approach to learning that it promotes, one in which the learner occupies a central position. By personally engaging in «socially, mediated construction of knowledge through CMC» (*Ibidem*, p. 19), learners are now in charge of their learning, and are empowered to take actions without necessarily having to rely on teacher-centered instruction.

2 CMC in foreign language education: CALL and NBLT

Computers have been used in foreign language (FL) education since the 1960s when Computer-Assisted-Language-Learning (CALL) first emerged. Broadly speaking, CALL refers to «the search for and study of applications of the computer in language teaching and learning» (Levy, 1997, p. 1). The first practices of CALL were mostly based on a behaviouristic approach to language learning (Warschauer, 1996b), according to which learning takes place through mechanical production, memorization and repetition of given grammar patterns (Richards & Rodgers, 1986). Traditional behaviouristic CALL practices, therefore, took the form of rather repetitive language drills (Levy, 1997) which aimed at helping learners master the foreign grammar and vocabulary by responding to the stimuli made available through technology. The CALL practices of that time were based on the concept that the computer functioned as a *tutor*, in other words as «a vehicle for delivering instructional materials to the student» (Warschauer 1996b, p. 4).

What Warschauer calls «the second phase» of computer-assisted language learning (1996b) emerged in conjunction with the communicative approach to language teaching and learning, which was characterized by a focus on the actual use of language forms; the need to stimulate learners to generate original utterances rather than manipulate prefabricated ones; an emphasis on creating an environment in which target language use feels natural and in which students are encouraged to explore and experiment with the language without being judged on what they have produced (Underwood, 1984, p. 52).

As suggested by Warschauer (1996b), this second phase of CALL stimulated the implementation of a wide variety of programs for language learning. Skill practice was still adopted, yet no longer in the form of drill exercises: instead, new language games, text reconstruction and paced reading programs aimed at providing learners with enhanced opportunities for choosing and controlling their own responses. Other practices radically moved away from a view of the computer as tutor and proposed activities in which the technological tools were used more as a *stimulus* to the learning process. As Warschauer puts it, the purpose of these activities was not so much "to have the students discover the right answers, but rather to stimulate students' discussion, writing, or critical thinking" (*op. cit.*, p. 4).

A further use of computer tools in communicative CALL approached the computer as a *tool* for learning (Warschauer, *op.cit.*, p. 5): instead of providing students with language materials, the computer functioned as a means to access, gather and process information through hands-on experiments, hypothesis testing and problem-solving. Word processing tools and grammar checkers are among the programs that were used – and are still used – to enhance learning

opportunities by means of technology. Another practice that started to emerge at that time was corpus-based analysis, thanks to which learners engaged in the exploration of authentic computer collections of texts to draw conclusions on patterns or rules of language use. This practice, also called Data-Driven-Learning (Johns, 1991), put learners in the new position of researchers, while the teacher became more of a facilitator, coordinating and guiding the research process (Bernardini, 2004).

The communicative approach to CALL was favoured by the increasing influence of the theories proposed by Hymes (1972) and Halliday (1973). In particular, Hymes' theory of communicative competence, with its emphasis on the sociocultural component of language (Richards & Rodgers, *op.cit.*, p. 70), and Halliday's emphasis on the study of language as it is used to perform a variety of functions. These theories helped move the focus to the communicative and functional dimensions of language use. Although both theories primarily looked at first-language acquisition processes, proponents of the communicative approach viewed them as offering powerful insights into second language development (Richards & Rodgers, *op.cit.*, p. 71).

This perspective was fertile ground for the emergence of a sociocognitive approach to foreign language teaching and learning, one in which the language to be taught was no longer seen as a mere set of grammatical competences but also as implying discourse and sociolinguistic and strategic competence (Canale & Swain, 1980). In a sociocognitive paradigm, authentic tasks and projects began to be adopted in CALL activities in which the development of communicative competence[10] was believed to occur through social interaction in authentic social contexts. As Kramsch and Thorne highlight (2002, p. 85), this brought about a radical change in the way technologies were used in the foreign language classroom, «moving many language arts educators from cognitivistic assumptions about knowledge and learning as a brain phenomenon, to contextual, collaborative and social-interactive approaches to language development and activity». In Warschauer and Kern's words, (2000) the emergence of a sociocognitive dimension in language learning paved the way to what they call Network-Based Language Teaching (NBLT), an approach which constitutes «the third phase» - also called integrative phase - of computer-assisted language learning (Warschauer, 1996b). Described as «language teaching that involves the use of computers connected to one another in either local or global networks» (Warschauer & Kern, *op.cit.*, p.1), NBLT differs from CALL in that it shifts the focus from mere interaction with the computer to interaction with other language users by means of computer networks (*Ibidem*), in contexts in

[10] In Canale and Swain's words (1980: 6) the term communicative competence refers to the ability to use a foreign language appropriately according to the norms and expectations of the community of speakers. In this light, communicative competence is a component of a more general language competence.

which the machine only serves to support collaborative activity and enhance the learning process both on-line, during the interaction, and off-line, in reflective practices (Meskill & Ranglova, 2000, p. 23).

As suggested above, the reasons for this shift are to be found not only in the technological advances of the time, but also in the new approaches to educational theory and practice that started to emerge under the influence of socioconstructivism, a theory which emphasized «the social and cultural construction of knowledge, the importance of collaboration among individuals and groups, and a learner- and problem-based approach to pedagogy» (Kern *et al.,* 2008: 281). As the body of literature on computer-networked language learning practices has attempted to demonstrate since the early 1990s, a computer-mediated approach to language learning can potentially nourish all these dimensions, insomuch as NBLT has been defined as a sociocognitive activity (Warschauer & Kern, *op.cit,*, p. 11) in which «cognitive and social dimensions overlap» (*Ibidem*, p. 5) and meaningful interaction and construction of knowledge in authentic discourse communities play a central role in the learning process.

As its definition suggests, NBLT activities can take place in local or global networks: local networks are set up at the classroom level to foster interaction within the group of learners by means of synchronous or asynchronous CMC, and have often been employed to compare the effects of computer-based and face-to-face communication on the learning process (see, for instance, Kern, 1995; Warschauer, 1996a). Global computer networks, on the other hand, are what constitute the basis for CMC practices that involve learners at distant locations interacting via «internet communication tools to support dialogue, debate, collaborative research and social interaction» (Belz, 2001, p. 213). This notion of global NBLT encompasses what is commonly called telecollaboration, that is Internet-based intercultural exchanges between geographically dispersed students, set up in institutionalized contexts with the aim of developing language skills, intercultural awareness and new online literacies (Guth & Helm, 2010, p. 14). Besides its global nature, what distinguishes telecollaboration from other NBLT activities is the specificity of its purposes: although language development remains at the core, telecollaboration is oriented towards intercultural learning, with the specific goal of helping participants develop and manifest intercultural communicative competence (as defined by Byram, 1997) and critical thinking skills.

Stretching beyond the local boundaries of the classroom and potentially reaching an enormous number of language users and learners in the 'digitalized world', telecollaboration has increasingly attracted the attention of practitioners and researchers in the field of foreign language education. As a consequence, a growing number of studies have been published that address the outcomes and potential benefits of telecollaborative practices. Among these, a predominant

number of the projects described in the literature have been set up between two or more groups of participants from different cultures/countries studying their respective partners' native languages (e.g. Belz & Vyatkina, 2005; Furstenberg *et al.*, 2001). As well as these kinds of bilingual exchanges, other projects described in the literature involve only one of the partners' languages (O'Dowd, 2006; Jauregi & Bañados, 2010) or a *lingua franca* (Helm *et al.*, 2012; Liaw, 2009).

3 Potential benefits of CMC in foreign language education

Much of the research carried out since the 1990s has pointed out a wide range of potential benefits of CMC - in both local and global networks - on language learning processes. Scholars and practitioners have highlighted how CMC can foster **authenticity** by bringing learners into contact with an authentic audience and by empowering them to interact on topics that are relevant to their own lives (e.g. Kramsch *et al.*, 2000; Hanna & De Nooy, 2003). Several reports have addressed the fact that electronic communication seems to bring about more **equality** in student participation than face-to-face classroom interaction (Graddol 1991; Sayers 1995), as well as increased levels of **participation**, both in qualitative and quantitative terms (e.g. Beauvois, 1998a; Sullivan & Pratt, 1996).

Motivation is certainly one of the main dimensions on which research into CMC has focused since its origins: increased motivation has been reported on as the fruit of exposure to stimulating and authentic learning contexts (Kern, 1996; Thorne, 2008), of collaborative work in a less-threatening environment (Beauvois, 1998b; Blake & Zyzik, 2003), and of learners' perceived feeling of having control over their own learning (Warschauer, 1996c).

Independence in the learning process, i.e. **autonomy**, is another element that seems to be promoted by stimulating individual reflective processes through CMC writing or discovery practices, social interaction with other learners or native speakers, as well as by encouraging learners to become responsible for their own learning (e.g. Cloke, 2010; Schwienhorst, 2003). One NBLT practice that is deeply grounded in the principle of learner autonomy is tandem learning, a form of bilingual telecollaboration in which dyads of students interact and offer mutual help in their respective native languages. Tandem learning has been described as an activity that, besides promoting language development and intercultural learning, has a strong potential for fostering learner reciprocity and autonomy (e.g. Kötter, 2002; O'Rourke, 2005).

Promoted to help L2 learners improve their language skills, communication through computer networks has also been found to provide evidence for actual **language and pragmatic development** (e.g. Thorne, 2003, Belz & Kinginger,

2003). Despite the positive outcomes that emerge from these studies, some researchers still remain sceptical about the assumption that CMC interaction can naturally lead to improved language skills. Practitioners such as Lee (2006) and Tudini (2003), for instance, suggest that enthusiastic reports be counterbalanced by research that explores the long-term effects of CMC on language development, so as to ascertain whether the mode of interaction can impact the acquisition process in a substantial way. From a different angle, authors such as Ware and O'Dowd (2008) highlight that, in global NBLT practices, grammatical correction is often seen as secondary to the actual communicative purposes of interaction, so that its potential for improving linguistic accuracy fades into the background.

These observations seem to suggest the importance of developing *ad hoc* activities to help learners **focus on form** within the context of online collaboration, so as to combine reflection and metalinguistic awareness with effectiveness of communication and negotiation of meaning. According to Ware and Perez Cañado (2007), online collaborative practices should include a focus on language, as they offer the advantage of working with texts authentically produced by the learners themselves. In this way, curiosity and metalinguistic reflection can be stimulated through translation and genre transformation practices, direct exploration of the language produced in the online environment and - especially in contexts in which learners interact with native speakers or more expert L2 users - peer feedback on a wide range of areas of language use, including grammar and stylistic usage choices. Practical examples of form-focused activities set up as part of CMC practices are offered by Levy and Kennedy (2004) and Belz (2006).

Conclusions

This paper has tried to briefly describe the distinctive features of CMC and its evolution over time in relation to foreign language education. Since the 1960s, when the first CALL practices started to emerge, the computer has played an important role in the teaching and learning of a foreign language: initially seen as a vehicle for transmitting knowledge to the learner, the computer later developed as a means to access and process information, thus empowering learners to take control over their cognitive and learning processes. In conjunction with the emergence of new sociocognitive approaches to language learning and the rapid growth of the Internet, foreign language teaching practices have profited from the potential benefits of CMC so as to offer learners new opportunities to construct, negotiate and share knowledge through interaction with other learners and speakers in local and global computer networks. As this brief historical overview has attempted to demonstrate, the computer and CMC

have had a privileged relationship in foreign language education, a field in which CMC has shown great potential in terms of skills development, enhanced motivation and participation, and it has fostered higher levels of authenticity than can generally be attributed to traditional face-to-face classrooms.

As technologies continue to evolve, new modes of communication and learning emerge: in recent years, the rapid growth of portable media applications such as cell phones and personal digital audio players (e.g. IPod[11]), have not only offered new ways to interact and connect with other people, but have also started to change the way teaching and learning take place (Chinnery, 2006). In the field of foreign language education, these innovations have opened up new ways to stimulate the acquisition of linguistic, communicative and digital competences, insomuch as CALL has started to be integrated by Mobile-Assisted Language Learning (MALL) practices (*Ibidem*). As the growing availability of portable mobile devices would appear to indicate, in the years to come learning will increasingly take place on the move, in ways that amplify the opportunities for learners to access information and engage in online communication in any place and at their own time, both within and outside the classroom.

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[11] http://www.apple.com/ipod/

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