UDK 371.3:004.7
Pregledni stručni rad

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COMPUTER-MEDIATED COMMUNICATION IN EDUCATIONAL CONTEXT

Abstract

We live in modern age. Consequently, most of the time we are being exposed to the technological advancements. To some of them we react with indifference; some of them we perceive as insidious threats; while the others are seen as a huge liberation. Thus, computer-mediated communication (CMC) falls into the latter category. Moreover, it is omnipresent and favored mode of communication cross-generation. Educators that are in constant search for expedient methods and means to employ in classrooms are, also, steadily becoming more and more positive of CMC convenience and advantages. This paper deals with factors that influence the implementation of CMC and present CMC environments e.g. wikis, blogs, Padlet etc. The objective of the present paper is to explore factors affecting the implementation of CMC and current CMC environments focusing on their effectiveness in educational contexts, based on the part of the work of researchers preoccupied with the topic. It has been found that CMC indeed has many pedagogical implications. This being the case, it would be advisable for the teachers to incorporate CMC at least to a certain extent in the regular learning/teaching process.

Key words: *computer-mediated communication (CMC), education, wikis, blogs, Padlet*

Introduction

Today, we use computers in a number of ways. They have managed to penetrate every sphere of our life and have strong influence on our system of education. Computers are used to prepare teaching materials, in-class presentations, tests, audio materials, etc. All this requires a lot of knowledge in the area of computer science and that can be an issue for teachers today, especially those who didn't have enough exposure to the technology in their youth. The aim of this paper is to shed some light on one aspect of this problem

and to provide short insights into computer-mediated communication in educational context.

Communication in education is a segment which is obligatory and we can hardly teach anything without communicating in some way. We can communicate personally, via phone, computer, snail mail, etc. However, as we have seen previously, computers are becoming more and more involved in our lives and our communication progressively depends on this form of communication. This paper will also try to prove whether this form of communication in educational context is really helpful or not.

The paper will be structured as to provide insight into several areas of computer-mediated communication (CMC) and its impact on education including definition of CMC, basic tools in CMC, benefits and drawbacks, implementation of CMC, CMC and language and possible educational uses.

Computer-Mediated Communication (CMC)

Computer-mediated communication is…

- Any communication pattern mediated through the computer (*Metz, 1994*)
- A facilitative tool for collaborative group work (*Jonassen 1996:1481*)
- The process by which people create, exchange, and perceive information using networked telecommunication systems (or non-networked computer) that facilitate encoding, transmitting, and decoding messages (*December, 2002*)
- "can cause many changes in the way people communicate with one another, and it can influence communication patterns and social networks" (*Fulk & Collins-Jarvis, 2001*)
- "CMC leads to social effects" (*Rice & Gattiker, 2001*)

As we can see from the aforementioned definitions, it is not an easy thing to say what CMC actually is. It can be something that is going to help us in working together whilst doing some business in a big group. CMC can broadly be perceived as any form of communication in which we use computers and in this case this is something we all do and most of us are rather good at, if not even experts, in CMC.

Motteram & Sharma (2009) assert that in the present computer era, the detachment of the inside from the outside of the classroom

and the relevance of the advancement and development of group dynamics is progressively being addressed with the rapid expansion of reciprocal, communicative and collaborative platforms, such as emails, instant messaging, wikis, blogs, forums, social-networking sites and virtual-learning climates. (Barrs, K., 2012) Not to mention, these platforms are not any longer exclusively confined to the desk in the shape of desktop computers and language learning labs in schools, but are more and more becoming mobile, what Warschauer calls time-and-place independence (1997, p. 470), on the gadgets carried around by students such as laptops, regular mobile phones, smart-phones and tablet computers. Barrs (2011) affirms that Motteram & Sharma (2009) and Warschauer (1997) claim that along with the increase in the number of student-owned gadgets, the rapid expanding of language learning related applications (see: Godwin-Jones, 2011), as well as the proliferation of convenient access to Internet-enabled hardware in educational climates, libraries, Internet cafes and homes, there is also an option to be apt to include students in target language mutual communication in and out of the school context. Therefore, according to Gross & Wolff (2001), students can be, as purported by Benson (2006), propelled to assume more responsibility for their learning, both inside and outside of the teaching environments. This further prompts the betterment of their autonomous learning competencies; an aspect that is more and more being noted as of immense relevance to promote in learners. (Barrs, 2012) Moreover, contends Barrs (2012), according to Daulton (2008) and Reid (1998), this is particularly typical of Asian contexts where courteous regard to the teacher and compliance with long-established modes of classroom teaching can confine the opportunities for learning.

CMC – benefits and drawbacks

Having in mind all the aspects discussed in the previous passages, it is important to understand all features of CMC, both good and bad sides of it. Therefore, it is necessary to objectively explain benefits and drawbacks of CMC.

In respect to benefits, students participation in CMC is more balanced than in the face-to-face interaction which is dominated by some students. (*Warshauer, 2001*) Thus students who have problems in gaining enough teacher's or colleague's attention overcome this difficulty quite easily using CMC. The lack of nonverbal cues about

physical appearance, authority, status and turn-taking allows users to participate more equally and more effectively than in face-to-face interaction. Customarily, collaborative learning boosts students' engagement in learning and drives them to thrive and excel and it makes students less anxious about any language lacks that might cause them to refrain from speaking in a face-to-face setting. (*Freiermuth, 2002*) In such settings, even if they do make language related mistakes, they will not get into situations in which they will be mocked at by their peers. Students are offered personalized learning opportunities and they have a sense of flexibility. CMC allows for intellectual exploration. It is fun, exciting and fosters thoughtful scholarly discourse, especially with those students who have difficulty expressing their ideas in class in front of their colleagues.

In respect to drawbacks, it should be emphasized that many of the drawbacks are related rather to participants than to the medium. In fact, students may display inhibitions related to computer technology use, especially older or adult students who did not have enough experience with the technology in their youth. There are also students who blamed their limited computer knowledge, which inevitably affected the interaction process such as perceived in complaints taken from (Nguyen, 2006, 2011): "What I don't like …. is my computer skills. When learning with technology like this, these skills were very important...I wish I had learned these skills before taking this course." Students may also experience frustration and stress due to sensory and data overload, because they are constantly bombarded with a huge amount of information that they have to process. "… It was not easy to follow the teacher's instruction." (Nguyen, 2006, 2011) Moreover, Thomas (2009) claims that albeit CMC tools have presented different possibilities for language learning, instructors should observe that the pedagogical approaches do not come along with the tools commonly. Instead, teacher training and a social constructivist professional model of advancement has to be in place in preparation for the propitious use of CMC tools. Additionally, it still requires a substantial investment of time and efforts by teachers and students alike. CMC in educational environments requires extensive training and many of the pitfalls are created due to the technology unfamiliarity (culture, rules, netiquette – e.g. emoticons). In such situation CMC can become time-consuming. Meyer (2003) evaluated student gratification with face-to-face versus asynchronous

discussion formats. He reported that nearly every student mentioned how much time it took to read others' posts, think about an answer, and check others' contributions to the discussion afterwards. (Johnson, 2006) Yet another downside of CMC is that cues (socio-emotional, nonverbal) are filtered out unless we are talking about conferencing tools in which participants can experience almost all elements of communication except for physical traits. There is also the matter of confidentiality and trust issues related to plagiarism. Kessler & Bikowski (2010), Matthew et al (2009), Woo et al. (2011) assert that many questions, such as authorship and ownership of online content generated during the online learning processes, were conferred by a variety of academics. (Luo, 2013) Finally, the lack of genuine human contact is what really makes CMC less appealing.

Factors affecting the implementation of CMC

Much consideration about a number of factors is needed to assure the success of CMC implementation in language learning. These factors, among other, encompass technology, context, modes of CMC, methodology exploited for language learning, linguistic features, task types, teachers' and students' perception of CMC, social presence, etc. It is currently impossible to elaborate on all of these so we will merely explain the most important.

- **CMC modes**

Text, audio and/or video affect the ways language is learnt. The influence of CMC mode on language learning was examined by different researchers. Yanguas (2010) as cited in Mahdi (2014) explored how learners in video and audio CMC group negotiate for meaning during task-based interaction. The participants of the research were randomly appointed to one of the three groups: video-conferencing, audio-conferencing, and face-to-face. According to the results, some differences in the way audio and video groups carried out the negotiations were evident. However, no differences between video CMC and face-to-face groups were detected.

- **Task types**

Yet another vital factor that exerts influence on the use of CMC is the type of assignment. Brandl (2012) as cited in Mahdi (2014) investigated into the effects of obligatory and optional tasks on

learner's quantity and quality of the use of language. It was exhibited in the results that optional task generated decidedly more learner output. However, students made fewer errors when implementing the obligatory than optional tasks. In accordance with the findings of their research, Johnson & Howell (2005) and Kear (2004) postulate that required postings are more effective than optional postings. (Johnson, 2006) As cited in Mahdi (2014), Yilmaz and Granena (2010) delved into the potential of learner-learner interaction through synchronous computer-mediated communication (SCMC) to focus learners' attention on form. The research compared two types of tasks, jigsaw and dictogloss. It was positively shown by the study that the type of assignment could affect learners' linguistic behavior.

CMC and language

Research shows that language skills can be learned and taught by means of CMC. Wang (2004) scrutinized the connection between graduate student online visibility (measured as number of Blackboard discussion postings) and final course grades. A close correlation ($r=0.7$, $p=.01$) was reported proposing that students who were highly visible i.e. contributed a vast number of discussion board postings academically outperformed students who were less asynchronously active. (Johnson, 2006) There are different CMC tools that can be used to upgrade individual language skills as follows.

- Listening skills

It is recommended to make use of podcasts in instructional contexts. Podcasts give results in learning/teaching listening skills according to O'Bryan and Hegelheimer (2007). (Mahdi, 2014) Online listening tasks in L2 could result in greater retention of information and lexis. (Mahdi, 2014)

- Speaking skills

Speaking competence of students can positively be bettered through CMC. Beauvois (1997) reported that learners who participated in the use of CMC outperformed their non-CMC peers in oral exams, when the scores were related to pronunciation, grammatical accuracy, lexical choice and accuracy and content. (Abrams, 2003)

- Reading and Writing skills

Collaborative skills are advanced through students' regular interaction in blogs. Vurdien (2011) examined how a blog as a CMC tool engaged a group of students of English as FLL at a language school in Spain in reflective and collaborative learning. Writing tasks were the focus. According to the findings, the engagement in negotiation of meaning between peers led to better planning and the choice of the appropriate register/style required in each task prior to writing and submitting their work. (Mahdi, 2014) What the study proposed was for pedagogues to intervene and by such means stimulate students to take their peers' comments into consideration so that they may edit their own work aiming at upgrading their writing assignments and producing tests with less or no errors. As far as emails are concerned, Shang (2007) investigated into the global impact of exploiting email for the purpose of promotion of writing performance in fields of lexical density, grammatical accuracy and syntactic complexity. The dominant finding exhibited that students indeed made progress in grammatical accuracy and syntactic complexity. Another finding proposed that exchanging email messages with their peers at least four times might have a more comprehensive advancement of their writing performance. (Xing, 2014)

Current CMC environments for language learning

In his article M. Higley (2013) states that Bonk & Zhang (2006), Er, Özden, & Arifoglu, (2009) and Skylar (2009) assert that online learning environments are becoming more frequent in teaching and learning than ever before. In today's digital time CMC environments for language learning abound. They encompass Yahoo Messenger, WebCT, Skype, Gmail, WebBoard, Plurk, Padlet (ex. Wall-Wisher), Bubbl.us, Animoto, Facebook, Twitter and many more.

- Skype

Skype has quite a number of appealing characteristics which make it highly eligible for learning and teaching climates. These components include Voice-over-Internet Protocol (VoIP) that facilitates audio/video conferencing, instant messaging, file sharing, screen sharing, and group video calls. Learners making use of Skype may both overcome

tangible obstacles and surpass their potential inhibition. However, despite the importance of all these CMC learning environments, only some of them, other than Skype, will be explained in this paper.

- Wikies

The term wiki relates to a website that permits its users to contribute, adjust, or erase its content by means of a web browser. It is multi-functional. One of its functions is to manage knowledge. "A wiki is a website which allows its users to add, modify, or delete its content via a web browser usually using a simplified markup language or a rich-text editor. Wikis serve many different purposes, such as knowledge management and note taking. " (Mahdi, 2014) In teaching environments, they are found to be auspicious particularly for developing writing skills. As maintained by Armstrong & Retterer (2008), Arnold et al. (2009), Ducate & Lomicka (2008), Kessler (2009), Lee (2010), Vurdien (2011) and Zorko (2009), wikies and blogs can also intensify students' overall writing skills. (Luo, 2013)

- Blogs

Blogs are websites that are regularly tended to in terms of contributing comments. They are written in informal or conversational style by either one or a group of persons. "A blog is a discussion or informational site published on the World Wide Web and consisting of discrete entries so called "posts" typically displayed in reverse chronological order (the most recent post appears first). More recently, multi-author blogs have developed, with posts written by large numbers of authors and professionally edited. Blogs also have benefits to language learning which were examined by some studies (e.g. Hsu, Wang / Comac 2008). ..." (Mahdi, 2014)

- Padlet

Padlet presents a virtual wall that permits students and teachers to share their materials. It is very easy to exploit and it boasts a user-friendly interface. Any Padlet wall that is designed may be integrated into student's or teacher's blog

or website. Moreover, it caters for customized learning i.e. students learn at their own convenience and in compliance with their abilities. For instance: Padlet provides students with a chance to share their ideas in a more spontaneous climate. This is a superb tool for brainstorming and also offers a host of layouts to choose from. It permits you to add notes, text, images, videos, and drawings to your wall with no problems at all. Students and teachers alike can also add word documents from computer to their Padlet walls. Padlet operates across a couple of devices including cell phones. In addition, it stimulates collaborative work. Several students may post to the same wall simultaneously. And one of the best features – any Padlet wall can be exported in multiple formats including, PDF, image, or Excel. Padlet offers possibility of aggregating links and other multimedia resources pertinent for students learning and posting them on the classroom wall for everybody to examine. Being completely free of charge Padlet is an instructional 'must have' CMC tool.

Educational uses of CMC

An implication for instructors is to come up with several types of synchronous and asynchronous communication so that suitable means are accessible for distinct learning tasks. The mixture of these two modes of e-learning supports several ways for learners and teachers to get mutually acquainted, exchange information, engage in thoughtful intellectual discourse, and cooperate in their work. A number of learners enroll in online courses by virtue of their asynchronous nature, which is to be seriously considered. For the discussion of less intricate matters, synchronous e-learning by media such as video conferencing, instant messaging and chat, and arranging face-to-face meetings as an addition, can be crucial as support for students to get to know each other. It also may yield results when designing the tasks at hand. For example, in situations when students are required to collaborate in group, they may be recommended to utilize instant messaging as support for getting to know each other. Notwithstanding, when discussing convoluted questions, in which the time for contemplation is imperative, it appears desirable to change to asynchronous e-learning and make use of media such as email, discussion boards, and blogs and engage in a knowledgeable scholarly discourse.

CMC encourages metacognitive learning and it is of the essence for teachers to take this into account when deciding whether to include CMC or not and what type, when, why, how and to what extent. Johnson (2006) contends that synchronous and asynchronous modes of online discussion have assets and there is evidence that both add to student intellectual and affective outcomes, although in a distinct style. Asynchronous discussion expedites student learning due to the intellectual processing needed in writing, time to ruminate about posted messages and contemplate written answers, and the public and long-lasting nature of online postings. Instructors ought to take into consideration that CMC tools promote affective and augment cooperative learning. Antenos-Conforti (2009), Lee (2011), Harrison / Thomas (2009), Mills (2011) maintain that the formation of a learning community is a leading theme across studies. A CMC tool, whether it is wiki, blog, Twitter, social networking sites, or any custom-designed social software like TACO, as stated in Chen, Chen & Sun (2010), all have great potentials to bring students into a learning community where they can have easy access to each other and further advance a sense of community and belonging through social interaction via the CMC medium. (Luo, 2013) Matthew's (2009) research was carried out with pre-service teachers in language arts classes where the use of wiki took place and was considered a part of the course assessment. By cooperatively constructing 11 wiki pages and a 26-page glossary as course content, the students were able to engage in cooperative content creation, which in this fashion greatly intensified their comprehension and brought their learning to a higher level. (Luo, 2013) Students may also capitalize on using Youtube and blogs in terms of boosting their autonomous learning by taking over more responsibility for their learning. Luo (2013) and Hafner (2011) implied that Youtube and blogs were perceived to be beneficial for students' independent learning. In Kessler's (2010) research, the teacher intentionally left the students with full autonomy that allowed their cooperative tasks to be accomplished with no intervention. To the surprise of the teacher, without the feedback from the teacher, students demonstrated "more willingness to edit their peers' writing than their own"(Luo, 2013)

Conclusion

Technology, as we have seen, offers a lot. It has many benefits and drawbacks but it greatly depends on teachers and students as most important participants in educational contexts. Teachers should motivate their students to assume more responsibility for their learning, in and out of the instructional contexts. This stimulates the advancement of autonomous learning skills which is a characteristic increasingly being seen as of great importance to foster in learners (Benson, 2006). Teaching personnel ought to be kept up-to-date and their training with regard to their technical-technological proficiency ought to be long-lasting and ongoing. Additionally, educators should be compelled to be promptly informed and 'kept in the loop' in terms of most recent instructional approaches in the use of CMC tools. Teachers' concepts about the extent to which CMC ought to be appropriated in language teaching contexts differ. The reason for this is that their comprehension of CMC is different and the level of knowledge about technology at their disposal varies. This is also valid for students. Their Internet proficiency likewise varies. In relation to pedagogy, educators ought to have multiple degrees of embedding the technology in congruence with students' degree and levels of digital media proficiency. Teachers might do both students and themselves a disservice if they presume that all students in the given educational climate have the required know-how of the digital devices and media. Thus, teachers hold accountability for diagnosing the right 'measure' of integrating the technology. CMC is an issue that is becoming more and more interesting for researchers from different areas and the purpose of this paper was just to scrape the surface of the vast sea of available resources about this topic and to provide motivation for many more works to come.

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KOMPJUTERSKI PODRŽANA KOMUNIKACIJA U OBRAZOVNOM KONTEKSTU

Sažetak

Mi živimo u modernom dobu. Posljedično, većinu smo vremena izloženi tehnološkom napretku. Na neka tehnološka dostignuća reagujemo ravnodušno, na neka od njih gledamo kao na prikrivenu prijetnju, a druga, pak, vidimo kao veliko olakšanje. Tako se kompjuterski podržana komunikacija (KPK) ubraja u posljednju kategoriju. Povrh toga, ona je općeprisutan i favorizovan vid komunikacije u svim generacijama. Prosvjetni radnici koji su u stalnoj potrazi za učinkovitim metodima i sredstvima koje bi koristili u učionicama također polako postaju sigurni u prikladnost i prednosti KPK-e. Rad se bavi faktorima koji utječu na realizaciju KPK-e kao i današnjim KPK okruženjima kao što su npr. wiki, blogovi, Padlet itd. Cilj ovog rada jeste istražiti faktore koji utječu na realizaciju KPK-e i KPK okruženja danas sa fokusom na njihovoj učinkovitosti u obrazovnim kontekstima a na osnovu radova istaživača koji su se zanimali za ovu tematiku. Ustanovljeno je da KPK uistinu ima mnoge pedagoške implikacije. Budući da je to tako, bilo bi preporučljivo da nastavnici uklope KPK u redovni process učenja/podučavanja, makar do određene mjere.

Ključne riječi: *kompjuterski-podržana komunikacija (KPK), edukacija, wiki, blog, Padlet*