

# Chapter 6

## Computer–Mediated Communication in Primary Education: An Overview and a Research Approach Example

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### ABSTRACT

*This chapter builds upon a previously published study in the International Journal of eCollaboration regarding the exploitation of asynchronous discussions in Primary Education. The originating point of reference was the fact that Computer-Mediated Communication (CMC) tools are being exploited in various sectors, including education. Especially in education, numerous studies can be found in the literature, spanning the past 30 years. Most of these studies concern adult learners in tertiary and continuing education. In addition, approaches regarding secondary education have arisen in the past 10-15 years. Where Primary Education is concerned, only a few CMC-based research applications can exist. This chapter presents all these studies in an attempt to highlight the dynamics of CMC in Primary Education. As established in the literature, communication is directly connected to argumentation, thinking, and consequently, to learning. Moreover, a detailed research study is presented, serving as an example of educational design in Primary School settings, fully utilizing CMC, asynchronous discussions in particular.*

### INTRODUCTION

Communication is something that characterizes humans, clearly distinguishing them from other species. New and more effective ways of

communication has been a constant pursuit for mankind, for ages. The vast growth of technology, especially during the past 30 years has not only enhanced the traditional communication forms, but has introduced new ways of interac-

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tion, collaboration and communication. The latter is exemplified by the key role of social media in everyday life; people communicate and interact with friends daily, even with ones they would not keep contact with or even be aware of their existence, in the lack of such technologies. These forms of communication take place regardless of time and space limits, while utilized, at the same time, in distance education approaches in order to improve students' achievements. In this vein, Internet has become a global collaboration and communication platform, allowing severe interaction to take place.

Regarding education, the cultivation of high order thinking is always a significant goal. Interaction and consequently communication with the support of computers (either through or in front of computers) can facilitate the development of high order thinking skills, as the literature highlights (Wegerif, 2002; Garisson, 2003). Moreover, the Web 2.0 era is characterized as being of a collaborative nature and the utilization of this aspect is a research goal for the scientific community. Computer Mediated Communication (CMC) tools are widely used by educators, in this vein, especially falling under the Computer Supported Collaborative Learning (CSCL) scope. CMC has evolved from specifically designed applications (e.g. discussion fora and chat) to integrated facilities of collaborative tools. This, in conjunction with the student-centered educational approaches and the sociocultural theories, has increased the interest in researching the use of network-based applications in class.

This chapter is examining the exploitation of CMC tools in Primary Education, focusing more on traditional applications, such as asynchronous discussion fora. An extensive review of the literature reveals that the actual in-class applications of CMC tools are not many, in Primary Education. At this extend, a research approach which utilizes asynchronous discussions in a 3<sup>rd</sup> grade class of a public primary school is presented in detail, as an exemplary case study. In particular,

the presented study examines if and at what extend the production of written language through asynchronous discussion platforms can affect (positively, negatively or neutrally) the cognitive level, but also the social behavior of students. The DIAS system (Bratitsis, 2007), an asynchronous discussion platform with integrated Interaction Analysis (IA) tools was used for implementing the educational activities.

The paper is structured as follows; initially the theoretical background is deployed, discussing issues related to Internet-based educational approaches, involving interaction and communication. Then the state of the art is presented, examining research approaches based on CMC tools, mainly in Primary education, as well as the educational practices used in language teaching. Following, the methodology of the presented research is described, before formulating the research questions. Finally, the results are presented, before the concluding discussion.

## **THEORETICAL BACKGROUND**

One of the core issues in education is that of learning and sustaining students' progress (Kress, 2004). In fact, learning is connected with *Critical Thinking* which is related to dialogue, educational discussions and students' writings. Critical thinking is described as the intellectual and emotional activity through which a person evaluates the reliability of the perceived information (Matsagouras, 2002). Glaser (1941) proposed three elements which are involved with the ability to think critically:

1. An attitude of being disposed to consider in a thoughtful way the problems and subjects that come within the range of one's experiences.
2. Knowledge of the methods of logical inquiry and reasoning.
3. Some skill in applying those methods.

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