Chapter 6

E-Collaborative Learning (e-CL):
Overview and Proposals

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ABSTRACT

This chapter investigates the highly researched and debated key issue of electronic collaboration (e-collaboration) in the learning process, onwards called e-collaborative learning (e-CL), in a holistic overview. The structure of the chapter is as follows. First of all, it clarifies the meaning and context of e-CL, and compares it with analysed relevant notions. Second, the human elements of e-CL and their roles are explored, classified into functional categories. Third, the supportive elements technology, pedagogy, and methodology are extensively visited. Fourth, the framework elements time, space, and society are presented. Fifth, the e-CL process is analysed, following the ADDIE model and analysing its phases. Sixth, significant affordances and challenges of e-CL are identified, and seventh, future directions are considered. Finally, conclusions are reached. Throughout the chapter new approaches, methods, and terms are proposed in the interests of the enrichment or the effectiveness of e-CL.

INTRODUCTION

E-collaborative learning (e-CL) can be regarded as a type of learning focusing on a specific learning method, collaboration, and a specific collaborative learning medium or resource, electronic technology (e-technology).

E-CL appears to the present digital age as something new when employing digital technology, but its roots are found back in history when regarding e-technology (Kock, 2008). The notions and practices of collaboration and learning were evident in certain forms from the beginning of human history and life.

This chapter objectives are to clarify the notion of e-CL and its related terms, provide insight in its process, focus on special interest areas, and present current and promising trends.

BACKGROUND

To approach the meaning of e-CL the notion of learning must be examined. First of all, it should be noted that in this chapter human learning is considered although it may occur among other creatures, such as, animals. Second, the notion of learning is connected with the notion of knowledge and the learning process can be considered as one of knowledge creation or construction or building following Scardamalia and Bereiter (2006).

To further explore the notion of knowledge, it is worth mentioning that there is a widely accepted distinction of informative elements into data, information, knowledge, and wisdom. At a data level there is isolated and meaningless information. Data are transformed into information when they acquire meaning. Information is transformed into knowledge or intelligence when it acquires situated context. Finally, knowledge is transformed into wisdom when it acquires personalised pragmatic context.

Furthermore, there is a model named 'the wisdom pyramid' or 'the DIKW pyramid' providing the subsequent transition from data to information, knowledge, and finally, wisdom. This transition occurs in proportion to the quality, quantity, and intimacy of the learning experience.

What is also worth noting is that four basic and increasingly difficult types of knowledge can be considered. Declarative or factual or plain knowledge, that is, regarding what, where and when, as an instance; procedural or skill knowledge, that is, regarding how; conditional or conceptual or structural or contextual or competence knowledge, that is, regarding the previous in an interrelated context, and regarding why; and finally, metacognitive knowledge or metaknowledge, that is, regarding cognition and knowledge (Krathwohl, 2002). The mentioned order depicts in general their increasing difficulty and importance. The first two types may be characterised lower-order knowledge whereas the last two higher-order knowledge. The latter type is most valued and wanted in learning environments.

As regards collaboration, it should be considered as a partnership community process, that is, the collaborating members share a sense of belonging, inclusivity, trust, and reciprocity as well as a common thinking and performing area. Moreover, the term collaboration is different from cooperation, since the former implies the construction of shared, mental or material, products to achieve a shared, mental or material, goal, for instance, problem solving, whereas in the latter each team member undertakes one part of the whole responsibility, constructs a separate product, combined with other members' products in a later stage, and achieves a subgoal (Arvaja, Häkkinen, & Kankaanranta, 2008; Ertl, 2008; Laurillard, 2012).

With regard to technology, in general it refers to any intended, mental or material, product of a mind bearing being. In certain contexts it may be used to denote the digital technology. In this study it is used in the sense of e-technology, which can be analogue or digital, but with a great focus on the digital aspect used for collaborative learning purposes, which is more often and widely applied.

Taking these into account one attempt to define learning is as the knowledge building process with knowledge building goals, and, in that sense, collaborative learning is regarded as the communicative shared-knowledge building process with shared-knowledge building goals. Following these, e-CL is considered as the communicative shared-knowledge building process with shared-knowledge building goals using networked electronic devices (Kock, 2008; Laurillard, 2012). The constructed shared knowledge is also referred to by the term 'collective intelligence'.

What is more, some discriminations should be made. First, this study is concentrated on formal and not non-formal or informal learning. According to Werquin formal learning implies intended process and preset goals whereas non-formal implies intended process but non-preset goals and informal im-

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