Chapter 4

Positive Interdependence in Blended Learning Environments: Is It Worth Collaborating?

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ABSTRACT

Computer-supported collaborative learning is becoming one of the most impactful learning and teaching approaches in higher education. The objective of this study is to analyze the effect of different conditions of face-to-face learning (cooperative, inter-group competition, and inter-individual competition) on the participation and learning of students in the virtual community. This investigation takes into account three parameters according to a Latin squares design. In this study, designing learning environments in conditions of collaboration without competition in face-to-face environments facilitates the cognitive responsibility of the collective and better achievements in the community to a greater extent. The authors did not find any benefits of intergroup competition or individual competition over collaborative learning without competition.

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INTRODUCTION

During the past few years, as a result of technological development, Computer-Supported Collaborative Learning (CSCL) is becoming one of the most impacting learning and teaching approaches in higher education. CSCL is a constructivist theory that defends the social nature of learning (Koschmann, 1996; Stahl, 2006). It is concerned with extending face-to-face collaborative learning to virtual collaborative learning using software packages (Stahl, Koschman, & Suther, 2006). As a consequence, introducing CSCL means tackling at least two challenges jointly: collaborative learning and the use of communication and information technologies.

Learning to work in teams is one of the main competences for 21st-century citizens (Fischer, Rohde, & Wulf, 2007). Learning focused on the collaborative construction of knowledge is generally defined as a situation in which particular forms of interaction are expected to occur that generate significant advancement of shared ideas in a learning community (Dillenbourg, 1999). In collaborative learning, students work in groups or communities that share motivation, goals and resources to learn in particular conditions. Sometimes, it is not well understood how to implement collaboration in the classroom. Different studies have shown that just asking students to collaborate does not necessarily turn into a high-quality learning (Neugebauer, Ray, & Sassenberg, 2016). Effective collaborative learning is achieved by promoting positive interdependence (Deutsch, 1949; Johnson & Johnson, 2005). It requires participants to tackle socio-affective and sociocognitive challenges both individually and collaboratively. During this process, students exchange knowledge, which may lead to sociocognitive conflict. In such cases, students have to argue and negotiate in order to specify, carry out, and assess a strategy that allows them to deal with a demand. This could consist of doing some activity together, solving a problem, or building new knowledge for the community (Laal, & Laal, 2012). The resolution of sociocognitive conflicts creates more complex knowledge structures (Fischer, Bruhn, Grasel, & Mandl, 2002).

From different pedagogical frameworks, research has found that the use of educational technologies can contribute to improving opportunities for collaborating and therefore the quality of learning (Alvarez, & Mayo, 2009; Mehlenbacher, 2010). Technology facilitates some temporal and geographical independence during collaborative learning. When students and teachers are connected to an online environment, they can communicate in both a synchronous and in an asynchronous way (Cleveland & Block, 2017; Gutiérrez-Braojos & Salmerón-Pérez, 2015). Another advantage associated with these kinds of environments is the possibility of registering participants’ activity. This provides a large amount of data which, if suitably analyzed, could help both the teacher and the students in their reflection-valuation work and the optimization of learning-teaching processes, as well as in the quality of educational environments (Long & Siemens, 2011).

CSCL is not just employed in purely online learning. In higher education, in most cases, it can be used in hybrid modalities. From suitable pedagogical approaches, university students’ learning quality can be powered through hybrid environments. In such contexts, technological tools are used to increase opportunities for learning collaboratively compared to purely face-to-face modalities (Gutiérrez-Braojos, & Salmerón-Pérez, 2015). At this point, it is thought that teachers face the challenge of assembling a hybrid modality that includes both face-to-face and online learning. This chapter provides an exploratory analysis about the effects of different types of interdependence on hybrid learning environments.
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