Chapter 8

Shaping the Future of Telecollaboration: Web RTC

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ABSTRACT

This chapter analyzes the present situation of telecollaboration processes in synchronous online learning environments. The Web RTC protocol is presented as a new tool for online videoconferencing and telecollaboration that may potentially change the already in use applications for such purposes. In this vein, its characteristics such as P2P connectivity, open source protocol, no plugins installation, scalability, and accessibility guarantee that this technological development will help enhance the learning process at different levels. Higher institutions and practitioners will particularly benefit from the use of this technology as its use will increase cross-cultural knowledge as well as expand students’ opportunities for out-of-class tuition.

INTRODUCTION

Higher education has to keep pace with the latest technological advances as well as support learning environments where new technological tools are put into practice. In order to expand and exploit learning possibilities, it is necessary to incorporate systems that may contribute to broaden the opportunities students have to access the content explanations and materials of different modules. During the last two decades, a great number of studies has explored the possibilities of distance learning

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processes, as well as its characteristics and limitations. In this vein, Moore, Dickson-Deane & Galyen (2011) defined this type of learning as a form of instruction that occurs between two parties (a learner and an instructor), held at different times and/or places, and uses varying forms of instructional materials. The concept of ubiquity that this technology offers allows students to cross socio-cultural boundaries and benefit from learning situations that may be taking place without the need for a formal learning environment. In this sense, teachers and practitioners should take into consideration the importance of learning opportunities, not only in a traditional classroom environment but also through the use of computerized systems that break with temporal and spatial lines.

With this aim in mind, telecollaboration between students and teachers from different institutions presents itself as a process where participants benefit from the use of a virtual learning environment (VLE) to develop learning aims. The process of collaboration is not new as the use of distance collaborative activities between institutions can be observed since the late 1800s and early 1900s (Dooly, 2017), nevertheless the ways of carrying out such process have been shaped depending on the available systems to connect peers and classrooms as well as on the evolution of technological resources. Dooly (2017) defines telecollaboration as the use of digital communication tools that allow participants to communicate from different places and work in groups to produce a particular work output. This synchronous or asynchronous process can be developed in a variety of settings and, in the educational field, normally focuses on learning, social interaction, intercultural exchange and communication. Research into telecollaboration and education has analysed different tools to carry out this process and normally has taken advantage of already existing applications such as Adobe connect or Skype which have been among the most widely investigated due to its functionalities and accessiblility. In the case of Skype, estimations indicate that its growth will reach 2.27 billion users by 2024 (Statista), and its rapid spread has led to investigation of the possibilities of this application in different educational fields. On the other hand, due to the cost of the subscription, its counterpart Adobe connect which develops very similar functionalities reaches over 12 million users. Notwithstanding the fact that both applications have led the videoconferencing and telecommunication market, technological development has given rise to other systems that permit the aforementioned processes without the need for downloading or subscribing to a particular application. This is the case for Web real-time communication (Web RTC), that develops peer to peer communication through the browser. The use of this technology could mean that teachers and learners could keep in contact without the need for downloading any specific software (Niibori & Kamada, 2016), simplifying videoconferencing and telecollaboration processes. Moreover, Web RTC provides a peer-to-peer (P2P) protocol, thus minimizing privacy threats and information regarding the data generated from the interaction as there
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