ABSTRACT

Cloud computing is a metaphor that suggests the perspective of being able to be connected anywhere, evoking on the one hand the complex technological infrastructure and suggesting on the other as the physical location of users and resources loses relevance, creating endless connections and endless ways to interact in the network. The aim of this work is to investigate the educational potential arising from the creation of networks that encourage learning through web 2.0. The development of learning networks that generate interconnections between different users can transform schools and universities in communities of practice, characterized by an open and multidimensional learning environment. Cloud learning combines the ability to tap into resources distributed information in context, turning a diverse set of applications on mobile digital devices in a personal learning tool. In particular, the cloud learning appears to offer an effective tool for the development of key competences identified by the European framework.

Keywords: Cloud Computing, Cloud Learning, E-Collaboration, E-Inclusion, E-Teaching, Flipped Classroom Model, Learning Networks

INTRODUCTION

For Weiss, cloud computing is a metaphor that suggests the perspective of being able to be connected anywhere, evoking on the one hand the complex technological infrastructure and suggesting on the other as the physical location of users and resources loses relevance, creating endless connections and endless ways to interact in the network.

Cloud computing has immediately aroused the interest of the scientific community involved in research in education, which has initiated...
research at various levels with the aim of determining whether the cloud formula can be a stimulus to learning and if the potential of collaboration and customization inherent in that formula can foster inclusive learning, with particular reference to Special Educational Needs.

Aims

The aim of this work is to investigate the educational potential arising from the creation of networks that encourage learning through web 2.0 (Ferrari & Rivoltella, 2010).

The development of learning networks that generate interconnections between different users can transform schools and universities in communities of practice, characterized by an openand multidimensional learning environment (Corona & Cozzarelli, 2012; Lage, Platt, & Treglia, 2000). The international literature has highlighted the critical elements of multimedia learning (Trentin, 2003) such as the non-methodical or superficial or browsing-based reading (Yang & Liu, 2007). On the other hand, the positive elements concern not only contents or approaches, but also the communication channels properly connected to the body, such as improvement of eye-hand coordination (Green, Pouget, & Bavelier, 2010) and of visual-spatial skills (Carlomagno, Di Tore, & Sibilio, 2013; Greenfield, 1984). Among the models that encourage the positive aspects of multimedia, an example is the flipped classroom model (Strayer, 2007).

It is a technology-based method of teaching, where the timing and methods of work are reversed. Subject of this reversal is the plan of work in the classroom. The traditional scheduling provides, in fact, a first stage in which the teacher carries out a lesson, followed by a second stage when students are assigned tasks and homework.

The difficulties arising from this approach are the subject of a very heated discussion, accompanied by alternative proposals, mostly developed in the constructivist field, such as problem-based learning, and cooperative learning.

The criticisms about the effectiveness of these proposals relate mainly to the dispersiveness, the difficulties of realization or the lengthening of the time.

In the flipped classroom model, the novelty is not so much in the method of teaching, as well as in different ways to propose and articulate the content to students and to organize learning time and space. The material consists of multimedia resources, videos, books or e-books. This seems in line with the current Italian politics in education. In Italy, implementing the EU directives, has been activated in fact ADI, the Italian Digital Agenda, which has produced, October 4, 2012, the Crescita 2.0 Decree, which promotes the spread of digital books and digital-oriented educational centers.

In the flipped classroom model, students study in consultation with the materials selected and proposed by the teacher. This is done first, outside the school environment, and not after the explanation of the teacher, as usually happens in the traditional model. The second part of the work happens in an institutional learning environment. At this stage, the teacher will propose all application activities: tasks, case studies, exercises, and other activities of exploration. In this context, technologies play a decisive role, becoming an indispensable tool for the implementation of the work. From the methodological point of view, we have a combination of direct instruction models with constructivist models.

The fallout and the effects on education systems can be really huge and positive.

Learning and collaboration become, increasingly, digitally distributed on decentralized networks, encouraging the emergence of social computing platforms that involve a significant network of people who connect on a global scale. These networks are able to filter and to provide the best and most relevant information to those who need them.

This model therefore fully meets the Digital SchoolPlan, promoted by the Italian Direzione Generale per gli Studi, la Statistica e I SistemiInformativi (General Directorate for Studies, Statistics and Information Systems),
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