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## New Horizons on Education Inspired by Information and communication technologies

Farida Bouarab-Dahmani<sup>a\*</sup>, Razika Tah<sup>b</sup>

<sup>a</sup> *The Computer science Department, FGEI faculty, University of Tizi-Ouzou, Tizi-Ouzou, Algeria*

<sup>b</sup> *Electrification of industrial enterprises Laboratory, Department of Economics, University of Boumerdes, Boumerdes, Algeria*

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### Abstract

Nowadays, society is affected by the information and communication technologies (ICT) challenges that come with the Internet network and the World Wide Web. We are talking about e-society, e-commerce, e-learning, web of things ... and so on. For education, what has changed after the ICT challenges? Are there improvements with this new "materiel"? What are the new horizons?

First of all, ICT introduces e-learning which is a way to learn using networks with a distant tutor. Second, we have digital learning resources to manage, which gives new learning scenarios and disciplines. Third, we can access a lot of pedagogical resources over the world, a good and a problematic fact. Recently, some studies present the finding that ICT are used without a mature integration in educational contexts. As result, sometimes there is no added value to the teaching/learning processes. Blended learning is a new direction to find how to integrate ICT tools to real classes so that the quality of teaching and learning will be really improved. This paper discusses these different points of views and gives a conclusion about some horizons where ICT will take the adequate place in classes.

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\* Corresponding author. Tel.: +0-213-26206012; fax: +0-213-26212968.  
*E-mail address:* [farida.bd2011@yahoo.fr](mailto:farida.bd2011@yahoo.fr)

## 1. Introduction

Information and Communication Technology (ICT) services are now used with various types of tools to aid the different learning tasks. Every day, new technological advances affect the way information is handled in education institutions, libraries and information centers. The impacts of new technologies are felt by every actor in schools and universities because computing, communication and mass storage technologies reshape the way that learners, teachers and education staff access, retrieve, store, manipulate and disseminate information to each other. The way of learning has changed and will change since ICT are in all ways a part of our lives and the former teacher isn't now the once and main source of information and the focal point of the teaching learning process.

Today we talk about two categories of people who learn and teach in different ways: the “digital natives” (Prensky, 2001), born in the digital age, who spent their entire lives surrounded by and using computers, videogames, digital music players, video cams, cell phones, and all the other toys and tools of the digital age. The second category, the “digital Immigrants” one, is composed of those who were not born into the digital world but have, at some later point in their lives, become fascinated by and adopted many or most aspects of the new technology. Consequently, using Prensky's “terminology”, digital immigrants instructors are teaching digital natives, it is clear that they can't teach the same way they were thought. Different works in the literature analyze this problem or change.

In this paper, the first point presents, the main horizons given by ICT for learning/teaching commonly called Information and Communication Technologies for Education (ICTE). The second point synthesizes the noticed changes as positives or negatives ones. After that, before we conclude, point three discusses some recommendations to get improvements or future horizons in learning with the ICTE use.

## 2. Horizons on Education Inspired by Information and Communication Technologies

The 1990s was the decade of computer communications and information access, particularly with the popularity and accessibility of internet-based services such as electronic mail and the World Wide Web. At the same time the CD-ROM became the standard for distributing packaged software (replacing the floppy disk). This allowed large information-based software packages such as encyclopedias to be cheaply and easily distributed. As a result educators became more focused on the use of the technology to improve student learning as a rationale for investment. Today, computers and networks, in schools, are both a focus of study themselves (technology education) and a support for learning and teaching (educational technology).

It has been suggested by LeBaron and Bragg (LeBaron & Bragg, 1994) that the role of technology in education is so important, that it will force the issue of didactic versus constructivist teaching. Teachers will no longer have a choice but will be compelled to use a constructivist approach in a technology-rich environment. Indeed, according to Mann (Mann 1994), the use of new technologies in an educational setting has caused the theory of learning, constructivism, to receive new attention. Students in these settings become empowered by gaining access to real data and work on authentic problems. We observe compatibility between constructivism and the use of ICTE and join Collins (Collins, 1991) who states, "So, inadvertently, technology seems to be coming down on the side of constructivists, who have been trying--unsuccessfully to date--to change the prevailing societal view of education".

We discuss below four key words presented in the literature as the bases of the different ICT challenges in learning and teaching: e-learning and MOOCs, digital workspaces, digital resources, and blended learning.

### 2.1. E-learning and MOOCs

Different concepts have been attributed to e-learning, but the term has also been substituted by others, such as computer based learning, technology-based training, and computer-based training, distant learning ... Moreover, some people confuse the concept of e-learning with the concepts of a virtual campus or online courses, which can be part of the e-learning universe but do not sufficiently define it. In (Sangra & al., 2012), a detailed study is presented about the 'e-learning' concept which has different views related to sociology, education science, psychology, ICT or computer science.

Simply, we can define e-learning as the domain that covers all methods of training using computers. This broad definition includes several independent axes such as: medias online or offline, learning individually or collectively, formater present or absent ... Other terms are sometimes used, we find: online training/learning, online education, distance learning, web based learning ...

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