

## Chapter 2

# Turning Digital Natives from Consumers of Digital Products to Producers of Knowledge

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### ABSTRACT

*The aim of this chapter is to examine ways to convert digital natives from consumers of digital products to producers of collective knowledge. At first, the 21st century skills and knowledge creation in modern societies are discussed. These set up new objectives for modern education. Then, some active learning methods and resources to help educators achieve these objectives will be presented. These, include: the use of Web 2.0-based tools, media and applications; the use modern portable devices and the possibilities they offer in learning; the use of Open Educational Resources (OER) and MOOCs in education; the use of multiple Free and Open Source Software (FOSS) products in education; the use of blended learning settings in a face-to-face learning environment. Three case studies and several examples are provided to illustrate the proposed methods and resources. Finally, this chapter aims at helping teachers educate digital natives by designing appropriate pedagogical and educational scenarios in order to engage the digital natives in knowledge production.*

### INTRODUCTION

Our era is characterised by the globalisation of knowledge and economy, budget limitations, technology evolution, need for innovation and need for efficient and cost-effective processes.

Education plays a crucial role in preparing the knowledge-intensive workers of tomorrow, which must possess a complex set of skills, the so-called 21st century skills (a definition is provided below). An important as well as unique

characteristic of today's students as opposed to previous generations, is that they were born in a technological environment; for this reason they are called 'digital natives', as opposed to the elders, being called 'digital immigrants' (Prensky, 2010). *Digital natives not only they have new and specific digital abilities; they also bring new concepts and interests (Cornu, 2011).*

The way digital natives perceive the world around us is different than our way, the way of 'digital immigrants'. Internet provides access to an

enormous amount of information. Digital natives like to spend their time by looking at screens of all sizes, from the 4-inch screen of their mobile device up to the 50-inch smart TV screen and spend a lot of their time on line.

Understanding the technological profile of the new generation that was born in a digital, interconnected world and always carries a hand-held device connected to the Internet, remains a *sine qua non* supposition for today's educators. Traditional school and traditional pedagogies can hardly cope with new generation. Digital immigrant teachers face multiple pedagogical as well as technological challenges (Cornu, 2011; Spanos & Sofos, 2014). Teachers no longer have the monopoly of knowledge delivery, and school is not the only place to acquire knowledge; social knowledge and informal knowledge (Andreatos, 2009) are becoming increasingly important (Cornu, 2011).

*Digital natives have a different way of concentrating and being attentive. They generally cannot concentrate for a long time and they go from one task to another in a very short time. They are 'multitasking' or performing several tasks at the same time (in parallel, or moving from one task to another). They prefer learning through visual and graphics rather than reading text. They are used to learning through interactivity and games. They have to be permanently connected, since knowledge is in the connectivity. They are used to a huge amount of information (and must learn how to cope with it, sort it out, and control it). They function best if networked, which means that learning is not only an individual activity, but also a collective one (Cornu, 2011).*

Information, however, is different than knowledge. Information has to be processed in order to lead to the construction of knowledge. This task requires judgement and experience, and this is where the teacher may play an important role.

Learning must become an active, creative and constructive process where the learner plays the central role, taking advantage of technological evolution. In this process the teacher should be the wise facilitator, counselor, advisor, mediator and organiser of the interaction between student and knowledge (Cornu, 2011). Technology has to be used as a learning tool, and it is the teacher's task and challenge to make this happen.

Digital natives are mostly consumers rather than producers of digital products such as videos, films, images, sites, etc. Being exposed to multimedia from their early childhood, digital natives gradually become what we call 'consumers of digital products'.

Digital natives are also involved in human and social networks (Cornu, 2011). *They like taking selfies and uploading multimedia content on social networking sites (Perez, 2012). Taking into account such concepts, proper teaching and learning strategies promoting collaborative learning and problem solving must be designed (Care & Griffin, 2010).*

Thus the objective of teachers should be to design modern learning scenarios, enabling the students to use technology, new media, portable or other computing devices as well as Web 2.0 tools in project-based collaborative learning. In this way students will learn by doing how to use all the above in order to produce and share knowledge in their teams.

In order to educate their digital native students, teachers (most often, digital immigrants) must get familiar not only with the Web 2.0 tools and skills, but also with the concepts of reusability, sharing and openness, which are keys to Web 3.0. Teachers must select and propose a proper set of Web 2.0 tools for use in each learning scenario. Needless to say, teachers need continuing education and effort in order to respond to such high demands (Cornu, 2011; Spanos & Sofos, 2014).

The objective of this chapter is to examine ways to convert digital natives from consumers

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