Chapter 1
Enhancing Education for the Knowledge Society Era with Learning Ecosystems

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ABSTRACT

In order to achieve a true transition from the Information Society to the Knowledge Society, Information and Communication Technologies must play a capital role in educational and knowledge management processes. The gap between advances in technology and current teaching methods is slowing up the integration of new educational technologies into already existing technological and methodological frameworks. As a result, the combination of mature educational technologies and

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educational methods does not meet the demands of today’s society. In the pursuit of ways to reconcile consolidated and emerging technologies with educational methods to improve educational processes, the authors propose a technological environment to support learning services: the learning ecosystem. This chapter presents an initial proposal of a learning technological ecosystem based on an architecture framework and interoperable components, and outlines the required elements, actions and methods for learning ecosystems to become a reality.

INTRODUCTION

Authors’ reflections upon the current state of the art on the application of information technologies to teaching and learning processes (Conde-González, Hernández-García, García-Peñalvo & Sein-Echaluce, 2015; García-Holgado & García-Peñalvo, 2014; García-Holgado, García-Peñalvo, Hernández-García & Llorens-Largo, 2015; García-Peñalvo et al., 2015a; 2015b; Sein-Echaluce, Fidalgo-Blanco, García-Peñalvo & Conde-González, 2015) reveal that we are not making the most of the potential of educational technologies for the improvement of learning and learning processes to meet the expectations and needs of a Digital Society willing to evolve to a Knowledge Society.

In the educational landscape, few technical innovations reach an adequate level of maturity as to permeate society. As a consequence, in many occasions most of them disappear at early stages of their lifecycle. Other innovations appear surrounded by a halo of hype and fascination that induces new practices, often followed by adopters without any systematization or aspiration to last in time. This kind of innovations usually ends up not living up to the expectations, and fade away once their novelty is gone.

The moment an innovation enters the end of the hype cycle may be precisely the ideal moment to get it back in track towards its adequate maturity point, because a technology may be most effective when it is put at the disposal of process innovation after it is no longer in the spotlight.

This also holds true in the case of education and information technologies. Learning Management Systems (LMS) constitute a perfect example of this hype-cycle paradigm. LMS are widely used and completely established in education, and they have deeply transformed online and IT-supported learning. Yet, despite their relevance, most researchers seem to have lost interest in LMS, as newer technologies become the new “last thing” –e.g. MOOCs, gamified learning, learning analytics, adaptive systems, etc. However, these newer trends have not had a disrupting effect, and therefore they have not been able to transform learning processes on their own.

This discussion leads to two important conclusions. First, LMS are no longer valid as a single component of technical innovation in education. Second, new
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