From the First Generation of Distance Learning to Personal Learning Environments: An Overall Look

Andrea Santo-Sabato(✉) and Marta Vernaleone

Mediasoft Research, Via Sonzini 25, Galatina, Italy
{andrea.santosabato,
marta.vernaleone}@mediasoftonline.com

Abstract. This article aims to confront how e-learning models have evolved over time from the characteristics of the web 1.0 to those of 2.0 looking briefly at the CMS, LMS, LCMS and PLE platforms and how it is essential to carefully first consider the constructivist pedagogical theories so as to comprehend the present situation, as well as that of the forthcoming future.

1 Introduction

Defining "E-Learning" is arduous, but of great benefit. Even today, scientific literature has not been able to produce an unequivocal, exhaustive and complete definition that encapsulates not only the complexity of the phenomena being examined, but also the variables that characterize experiences linked to Distance Learning and E-learning. Every attempt has therefore only partially achieved the fixed goal [1].

Fixing a definition means carrying out what it actually defines, and the difficulty lies exactly in this: how can one "maieutically" define the field of "E Learning" without falling into the trap of recursive, auto referential and tautological defining processes? This difficulty also stems from the conception that "teaching" is the "transmission of knowledge" linked to a solely anthropological view of humankind that has become engraved over the course of millennia [2]. We therefore pass from an "instructor centered" to a "learner and learning centered" model [3].

A rare attempt that succeeded was by the ANEE Observatory who in 2004 defined the phenomenon of E Learning.[1]

[1] Eletti V. (a cura di), Che cos'è l'e-learning, Carocci, 2002: "E-learning is a method of teaching and learning that involves both the product and the training process. Product training is any type of material or content made available in digital format through media or network. Training process is meant instead to manage the entire learning process that involves the aspects of supply, use, interaction, assessment. In this dimension, the real added value of e-learning emerges in support services and tutoring, in both synchronous and asynchronous modes of interaction, sharing and collaboration at the level of the community. Peculiarities of e-learning is the high flexibility afforded to the learner by the availability of anytime, anywhere learning content, which enables the self-management and self-determination of their own learning; remains of paramount importance scanning of the training process, according to an agenda that empowers forming and trainer in order to achieve the educational objectives set."

G. Vincenti et al. (Eds.): eLEOT 2014, LNICST 138, pp. 155–158, 2014.
DOI: 10.1007/978-3-319-13293-8_19

We therefore deduce that together with the use of new educational paradigms that are intrinsically linked to the rapid diffusion and propagation of new technologies, E-Learning changes the way in which educational processes are managed, in which learning is obtained and provided, and in which educational content is organized, managed and designed [4].

The role of the user becomes fundamental and of central importance. It is the conception of a learning system that from now on is based on the web and separate from space and time [5]. It is now the student who decides how to approach study methods via collaborative, active and pro-active learning in complete autonomy. As underlined by Ganino [6], in order to be categorized within the phenomenological field of "E-learning", the processes of "digital provision of learning" must have the following essential characteristics :

- Interactivity with teaching materials, the tutors, the teachers and other students
- Multimedia exposition
- Independence from temporal and physical limitations
- The valorisation of the social and collaborative dimensions of learning
- The constant monitoring of the learning level via self-evaluation and evaluation
- The access to platforms via the web and technological devices
- The synchronous or asynchronous interaction of the processes

The role and experience of the User/Student now becomes "fundamental" and decisive. Learning becomes a social process, that gives an active role to the user who becomes a member of a community on which "the whole learning process" is linked to a "horizontal" sharing of knowledge.

2 From DL to E-Learning

Perhaps Isaac Pitman, the English inventor of the phonographic system for the stenograph, would not have believed that his idea of "teaching" via correspondence course would in time have revolutionized the paradigm of the centrality of teaching between teacher/student. Without digressing in interesting historical and historical evolutionary opinions, let us see how e-learning has passed from the perspective of closed environments based on the provision of structured and rigid content to the centrality of the person who is learning and participates in the shared construction of their knowledge. The introduction of web 2.0, has revolutionized teaching models, methodologies and tools. From now on the "Leitmotiv" is "Participation and Sharing": it is now the individual subject who produces knowledge and becomes the creator and propagator of contents on-line. "Multimedia and multi-channel availability" are the technological basis of this new approach. This new paradigm of proactive learning leads to the growth of the individual within objectives shared by a group: from now on one "learns together" and individual learning is the result of a collective process. Shared knowledge is created, new virtual learning communities are born and individuals learn through areas of interest in which they can communicate in an interactive way. The technological matrixes behind this new phase are supported by: video/audio conferences, chat groups, forums, instant messaging, podcasts etc.

This is the new "Digital Learning" model in which being proactive takes on a key-role for growth and development. This phase is characterized by and stands out for the retrieval and valorization of spontaneous and informal ways of using the web. From now on the Web is the spontaneous "educational setting" that integrates both what is formal and informal. This conception is supported by Paulsen's [7] hexagon theory and Vigotsky theories on intersubjectivity and learned behavior, in which the environment (technology) is a guide and "scaffolding" for the development of knowledge and capabilities.

As mentioned, this phase commenced with the launch of Web 2.0. In parallel, there was a decisive evolution of e-learning in which new technologies substituted "Virtual Learning Environments" based exclusively on CMS (Content Management System), LMS (Learning Management System), and LCMS (Learning Content Management System) platforms, with the more communicative and agile PLEs "Personal learning Environments". Every individual can create their own personal learning environment so as to manage and organize their own personal resources in complete autonomy. Now that the web is more interactive and dynamic, it is the users rather than technology that add value to the services that the web has to offer. Using PLEs, with their participative architecture, each individual becomes a player and author of content, according to participative and collaborative models. These are therefore environments that are based on people, that are able to support both informal and formal educational elements that are based on consolidated schemes outlined on the web by e-learning platforms. On PLE platforms the rules that Ravitz described in his 4P model apply [8].

The aim is to overcome the problems in traditional education by overcoming the "informal/formal" dichotomy (via the assumption of constructivist pedagogical theories): this aim can be reached passing from a static vertical type of education to a conception of the autonomy of an individual within a group.

The user is now the beneficiary and creator, as conscious designer of their own learning. We pass from "closed" and one-directional spaces to shared interconnected spaces that place the student ever more and the teacher of the course ever less at the centre of the learning process: through the possibility offered by these new platforms, the user can autonomously choose the ways of receiving knowledge and enlarge the content itself through their own experience, thus propagating new shared experiences for the group or class they belong to. Via interactivity, courses are "learned centered" and "cooperative learned". Learning is no longer based on vertical "educational" provision, but starts and develops in a network of already founded relations.

An interesting aspect is the possibility to join virtual communities that are interested in discussing and working on the same topics, sharing experiences and activities. The centrality of relational aspects is clear: knowledge is built in a new, interactive and collaborative way.

The concept of community is of central importance: in the community education is a social event, that doesn't end with receiving operations but generates a "continuum" propagated by informal ties of the student with the group and the student with the teacher.

We are therefore witnessing a migration towards new horizons of e-learning, both from the theoretical and practical points of view, where new technologies heavily linked to the Web 2.0, are little by little overtaking the "old" virtual learning

environments (identifiable in the various LMS or LCMS platforms) with the more flexible and communicative PLEs. One begins to talk about Web 2.0.

The first to talk about 2.0 e-learning was Stephen Downes, a researcher for the National Research Council of Canada and one of the leading e-learning experts on a global scale. In an article published on the eLearn Magazine, Downes first theorized the link between e-learning and Web 2.0, providing the basis of a discussion that in time gradually became of global scale and is very likely to become the future of electronic learning.

PLEs are therefore to be considered the environment for learning in the future since they encapsulate the "learner student centered" paradigm in an incisive way by integrating E-portfolios as a structural element.

Within this superior penetration of PLE platforms, one must consider Blackall's more radical vision who states that the web itself is a PLE system and that a specific intermediate system is therefore not necessary.

3 Conclusions

In the near future we will no longer talk about transmission "media", platforms or paradigms but of "environments" and "systems" in which information, content and "knowledge" will be assembled according to personal taste with regards to main necessities and interests. Applications and platforms will bow out to interconnected "environments", in which importance will not only be given to the information "deposited" but also to how they are conveyed.

We are therefore moving towards the so-called "ubiquitous computing". Learning and real-life will merge indiscernibly.

References

1. Banzato, M.: Apprendere in rete. Modelli e strumenti per l'e-learning. Utet, Torino (2006)
2. Aleandri, G.: Educazione permanente nelle prospettive del lifelong e lifewide learning. Armaldo Editore, Roma (2011)
3. Bonfiglio, A.: E-Learning, Podcasting: una didattica collaborativa in rete
4. Eletti, V.: Che cos'è l'E.Learning, p. 65. Carocci Editore, Roma (2002)
5. Trentin, G.: Insegnare e apprendere in rete, pp. 120–123. Zanichelli, Bologna (1998)
6. Ganino, G.: Immagini per la didattica. Metodologie e Tecnologie dell'audiovisivo digitale, pp. 60–61. Anicia, Roma (2009)
7. Paulsen, M.F.: The Exagon of cooperative freedom: adistance education theory ayyuned to computer conferencing. In: DEOSNEWS, vol. 3, no. 2
8. Ravitz, J.: Building online communities and ID model