

Chapter 8

Ubiquitous Technologies and the Emergence of New Learning Experiences

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ABSTRACT

With the popularization of mobile devices and access to Internet, there has been an intense growth in ubiquitous learning products and studies. How does this effectively impact learners' (not just students') and teachers' daily lives? This chapter presents a literature review on ubiquitous learning, highlighting the impacts of this paradigm on the educational practice, seeking to combine this paradigm with social learning theories. Finally, the authors describe the extension of a social learning service called Redu, whose development is guided by the flexibility of pedagogical models, self-regulated learning, and by supporting the context, allowing a ubiquitous learning experience.

INTRODUCTION

What really matters when dealing with new technologies in education is the unusual didactical mediation introduced by the new technologies. So, far away from representing a simple fad, smartphones and tablets integrated with social networks enable the development of distributed work and learning communities. Through those artifacts, individuals

and groups interact productively, communicating and creating new ways of working, teaching and learning. One of the keywords guiding this new way of working and learning is collaboration. The use of these technologies enables, among other things, the exchange of information and experiences among professionals and students by creating environments and communities to interact and learning together. Only those facts should justify the extensive use of this tool as teaching material. However, what justifies the fully didactic

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appropriation? We follow Anderson (2004), who proposes that emerging interaction styles seems to accommodate new teaching practices, transforming the structure of practices taking place in between the ‘poles’ of the didactical triangle: the teacher(s), the learner(s), and, the knowledge. Next, we will describe possible situations between these poles, two by two.

Technologies expand the possibilities of the *Teacher-Student* relationships to beyond the school environment and the school teaching time period. Teachers’ can structure didactical sequences to present information they consider the most didactically appropriate. The communication can be largely mediated through many media and styles: images, websites, books, educational games, forums, email, and instant messages. Those process are very important to construct empathy between people by transmit the ‘shining eyes’ and motivations. The remote interactions complement classroom meetings extending the communication possibilities. New forms of communication and new didactic functions are enabled by communication technologies. Thus, teachers and student experiment a rich communication and mediation process. Just to show an example of this unusual experience, let’s imagine what can happen when a teacher reuse all the dialogues conducted in a digital forum with a previous group when starting a new class. Technology can plays a role of collective memory and an all series of interpretations and communication phenomena take place. So, technology allows the organization of unusual situations in an intuitive and simplified way. Just to list some others possibilities: coordination of learning communities activities, didactical team extension, formative evaluation, distinct and complementary communication channels, transactional distance improvement using cross platform interaction (Moore, 2002; Tori, 2008), group activity perception and awareness, activity visualization, and cross platform digital communication genres.

Considering the *Teacher-Knowledge* relationships, the possibilities of search and information sharing are almost unlimited. Digital media is flexible and somehow demands a more reflective practice and greater effort to plan what to do. This ‘side effect’ is seldom considered by designer of educational technologies. Undeveloped practices like sharing knowledge and practices among colleagues are also phenomena to consider. So, informal and peripherals practices, become essential and are legitimated by the structure of the new teaching practices.

Lastly, in the *Student-Knowledge* relationships, we watch the emergency of so many possibilities of self-directed knowledge construction. Apart from lectures and meetings that occur between Teachers-Students in the space of the classroom, colleagues can help each other. The communication between them is intense and quick. The willingness to extensively share information – which former generations had not – promotes a huge set of positive impacts. On the other side, teachers assume roles to guide the construction of the meaning of what students are learning.

Students manage their learning process. The central concepts in this scenario are the metacognitive competences; specifically self-regulated learning ones. Developed students use a greater degree of self-regulation processes - by define their learning objectives and begin to track them - tend to require lower levels of intervention instructor. These students tend to establish rhythms and learning different strategies to achieve their goals. Students who develop these competences can effectively learning from collaboration.

The challenge of the design of collaborative learning environment is to create such adequate digital artifacts to influence the development of learners’ competences and thus became unnecessary. We present the system Redu later in this chapter, designed with this intention (Gomes *et al.*, 2012).

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