Chapter 3
Web Technologies and E-Learning Strategies for New Teaching Paradigms

Antonio Cartelli
University of Cassino, Italy

ABSTRACT
The chapter aims at presenting some teaching experiences the author made for the introduction of the ICT and especially of Web technologies in teaching. In the introduction the need for the use of digital literacy strategies in education and the acquisition of digital competences in the knowledge society are discussed. Soon after, the problems teachers have to face in today society are analyzed and the recommendations of national and supra-national institutions for the continuous education of these professionals are reported (i.e., the European case is almost exclusively discussed). Subsequently a new teaching paradigm based on the implementation of practices is proposed and the features of the information system TETIS, which made possible the use of that paradigm in a master course for teachers, is explained. It is evidenced, among other things, how that system (born for making transparent teaching processes and implementing teachers’ practices) has been used to implement the changes induced by the new regulations in the Italian school. The results from the final questionnaire for the evaluation of the use of the TETIS platform, submitted to the teachers who attended the master course, are at last discussed and new proposals for an effective introduction of new technologies at school is proposed.

INTRODUCTION
During last decade the importance of IT and ICT in lifelong learning and continuous education grew exponentially and new instruments and tools were developed to help individuals in the overcoming of the complex problems of today society (Trentin 2003, Thorpe 2005, Dashti & Safar 2007). New technologies didn’t help only the subjects to improve the quality of their life, due to socio-technologies and social networking, in fact, they also improved the efficacy of communities of practice in corporate and organizations and supported professional communities in their growth and evolution (Biolghini 2001, Trentin 2004).
At the same time the approach to IT and ICT introduction in teaching-learning activities has changed; first, teachers and educators thought it was important to teach technology (computing, algorithms, programming etc.), now there is more interest in the use of new technologies in everyday teaching and in the creation of suitable teaching-learning environments (i.e., constructivist environments, real or virtual they are).

National and supra-national political institutions too, showed great interest for the changes induced in today society by the presence of IT and ICT. The European Commission (2005), for example, in its recommendation to member countries, on European citizens’ key competences for lifelong learning, included digital competence as the fourth key competence. The reading of the Commission recommendation clearly shows that digital competence involves the confident and critical use of Information Society Technology (IST) for work, leisure and communication and it is underpinned by basic skills in ICT: the use of computers to retrieve, assess, store, produce, present and exchange information, and to communicate and participate in collaborative networks via the Internet.

The acquisition of the digital competences by European citizens mainly aims at:

a) the understanding and knowledge of the nature, role and opportunities of IST in everyday contexts: in personal and social life as well as at work. It includes main computer applications, a sound use of the Internet and the communication via electronic media (e-mail, network tools) for leisure, information sharing and collaborative networking, learning and research,

b) the understanding of the support that creativity and innovation can receive from IST, the development of sound understanding skills helping to state if information is valid, reliable and affordable enough and the knowledge of the ethical principles for the interactive use of IST.

The analysis of the literature on the definition of digital competence and on the many terms adopted today for the description of the knowledge and skills needed by the IT and the ICT use, like information literacy, computing literacy, digital literacy etc., show that digital competence is

- multidimensional, because it implies the integration of cognitive, relational and social abilities and skills,
- complex, because it cannot be completely measured by single tests and very difficultly can be verified in a short run; it requires more time and different contexts before becoming evident,
- interconnected; it is not independent from other key competences like reading, numeracy, problem solving, inferential skills etc.
- sensitive to the socio-cultural context, because its meaning could change over time, according to the context and to the different educational settings.

It can be easily deduced from the above statements that digital competences are very important in teachers’ everyday school work and, as a consequence, they are essential in their profession, both when looking at teachers’ first employ and at their in-service training (Borghi & others 2002, Rivoltella 2003, Galliani 2004).

In the following section the special aspect of teachers’ education concerning the challenges of the knowledge society is discussed in a greater detail.

**Digital Literacy, Digital Competence and Teachers’ Education and Training**

The team of Eurydice, the European network for education, which collects scholars and researchers all over Europe, analyzed teaching profession in the different European countries and wrote many
11 more pages are available in the full version of this document, which may be purchased using the "Add to Cart" button on the product's webpage: 

www.igi-global.com/chapter/web-technologies-learning-strategies-new/40530?camid=4v1


www.igi-global.com/e-resources/library-recommendation/?id=1

Related Content

Supporting Evolution of Knowledge Artifacts in Web Based Learning Environments
www.igi-global.com/chapter/supporting-evolution-knowledge-artifacts-web/29646?camid=4v1a

Cognitive Apprenticeship in an Online Research Lab for Graduate Students in Psychology
www.igi-global.com/chapter/cognitive-apprenticeship-online-research-lab/62900?camid=4v1a

The Effects of Teacher Content Authoring on TPACK and on Student Achievement in Algebra: Research on Instruction with the TI-Nspire™ Handheld
www.igi-global.com/chapter/effects-teacher-content-authoring-tpack/55368?camid=4v1a

Distance Learning Using ExperInn E-Learning System Through Web
Chetankumar G. Shetty (2012). International Journal of Web-Based Learning and Teaching Technologies (pp. 43-50).
www.igi-global.com/article/distance-learning-using-experinn-learning/75207?camid=4v1a