Chapter 72
Theory and Practice in Digital Competence Assessment

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ABSTRACT

Today, life is more complex and difficult due to uncertainties in society. Liquid life (Bauman, 2006) is frenetic, rapidly changing and highly influenced from information and communication technologies, and forces subjects to adapt to group behavior avoiding exclusion. Human beings are experimenting with the digital age and the pervasiveness of computers and IT/ICT equipment, which are influencing learning and knowledge construction. This raises questions in regard to a privileged role for digital competences in the knowledge society, whether or not there is a framework for digital competence assessment, and possible hints, suggestions, experiments, protocols, or curricula helping teachers in hitting this target with students. This paper answers these questions, describing the evolution of psycho-pedagogical paradigms and their comparisons. A framework for digital competence assessment is proposed and teaching activities are suggested. A proposal of a teaching-learning process called OTS (Open Teaching Process) is also presented.

INTRODUCTION

It is straightforward to note that IT/ICT and especially the Internet have deeply modified, during the last thirty years, the approach that subjects and society have to learning, knowledge construction and communication. Less evident is the impact that the analysis of the above situation has on the planning and carrying out of the activities leading to the improvement of subjects' features and to better society. It is probably for this reason that makes sense to question about the features of education and teaching in today society, better known as the "knowledge society".

It is behind the aims of this paper a deeper discussion of the features of knowledge society, and what has led to the transformation of industrial, post-industrial and information society into the

new one. But the following issues, emblematic for the understanding of the contradictions in our life and very important for the discussion of what follows, merit to be analyzed here:

- The gap existing between "digital natives" and "digital immigrants" (both in learning styles and knowledge development) (Prensky, 2001); otherwise stated, young people can use digital equipments to better perform in getting information and communicating with respect to elders, and, what is more, new generations have different perception of reality and, usually, are more ready to act than to think about phenomena,
- The permanence, or the lowering, of the already low basic skills and competences in reading, writing and computing for students at different school levels (OECD, 2009), at least in Italy. This result seems to contradict what is reported in the item above, because it is usually recognized that the use of digital equipment implies the development of good information management skills (meta-cognitive skills); recent works show on the contrary that students have problems in the use of computers and other digital equipment, when high level operations with information are required (Pozzali & Ferri, 2010),
- The basic skills and competences for lifelong learning, which are considered essential to let people be the citizens of the knowledge society. On this regard the Commission of the European Community recently approved a recommendation for all member countries, reporting the set of these competences. Digital competences, the fourth among them, are considered especially important because of their cross cultural features with respect to language (reading / writing) and calculus compe-

tences (Council of European Parliament, 2005).

It can be easily deduced from the above issues that today, more than in the past, the acquisition of better knowledge, skills and meta-cognitive features from subjects, go hand in hand with the analysis of the social environment and its.

Also if different perspectives and theories can explain the changes today happening, the metaphors of liquid and solid modernity will be adopted here to obtain a better vision of the social change; they have recently been developed together with the concept of post-modernity (Bauman, 2006), under the influence of the continuous growing of information production and transmission and the effects of pervasive computing and digital equipment explosion. These phenomena are the basis of the uncertainty of today society and of the transformation of human beings; furthermore, they state that the most important reason for the change in the society is the destruction of the certainties, because liquid life is more and more frenetic than in the past and forces the subjects to adapt to group behavior to avoid exclusion.

In this context the following questions claim for urgent answers:

- Is there any privileged role for digital competences in the knowledge society?
- Is there a framework for digital competence assessment helping people harmonize their competences and helping them become better persons and citizens in this society?
- Are there hints, suggestions, experiments, protocols and/or curricula helping teachers in hitting the above target with their students?

In the following paragraphs these questions will be discussed by starting with the description and the comparison of the psycho-pedagogical paradigms describing learning phenomena, soon

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