Learning Processes and ITC

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ICT AND THE LEARNING SOCIETY

Confronting with the educational emergences defined—in the white paper presented in 1995 by the European commission with the title "Teaching and Learning. Towards a Society of Knowledge"—the Commission identifies three main factors of upheaval: information society, internationalization and the world market, scientific and technological knowledge. These factors involve a modification of the systems of knowledge and work, and, as a consequence, also of educational politics which must promote a personal development of citizens through the development of the necessary competences in dealing with these factors.

The consequences that emerge are the reported in the next section. First of all, the society of knowledge is linked with a condition of uncertainty and risk of social exclusion, which determines a great disorientation for the individual. The individua is exposed to infinite cognitive potentialities on one side, but also to a cognitive weakening on the other side. Among these risks, the first is a disorganized and confused fruition of the knowledge resources offered by the symbolic world in which the individual is plunged in. He/she is irreparably depressed when plunged in an infinite net of knowledge which the individual can not reach in a critical way, being also bombarded by pervasive—usually persuasive—information of mass-media pushing him/her toward homologation.

Another risk is linked with the traditional school curriculum: the individual stores up a static series of set portions of knowledge, transmitted usually by outdated strategies, but the individual is not stimulated to "learn to learn", which is what is needed to be able to face and actively take part in the post-modern society.

The indications provided by the white paper are clear: in order to be able to confront with a quantitative increase of information and forms of knowledge, as well as an increase of complex, fluid (Bauman, 2000) and changing situations, what is needed is a formative planning which aims at fostering knowledge and general culture on one side, that is, spread in a capillary way the ability to catch the meaning of things, understand, be able to act, choose, create, adapt to the present complex social condition; on the other side at developing an aptitude at occupation, that is to say encouraging —through an access to lifelong learning, e-learning and promoting ICT—the social mobility of citizens (workers, students, adults, young people).

At a careful analysis it is clear that the current "society of knowledge" is tied to a culture that regards education only as a function of market needs, thus penalizing a knowledge considered unnecessary and favouring a reproductive idea of competence against a critical, constructive and transformative competence.

It is therefore arguable that the most important part of what we define "understanding" is actually linked with the activation and structuring of feeling. The dimension of feeling helps everybody to "become him/herself", to grow up, or, vice versa, leads to a missed existence when this only chance fails (De Monticelli, 2003).

The European Commission, finally, suggests five general objectives in order to create a "learning society": *encourage the acquisition of new knowledge*, that is, raise the general level of knowledge, implementing new systems that recognize technical and professional competences beyond what is stated in diplomas; *bring school and the business sector closer together*, that is, develop a professional training system that keeps up with new conditions in production and with the needs of the world of work, also with the promotion of apprenticeship/trainee schemes at European level; *combat exclusion*, that is, offer a second opportunity to all the categories of population left by the wayside (young people with no qualification, older workers, long-term unemployed, women) to improve their social status. This can be achieved through an adequate training offer, complementary funding, consultation and part-

nership with firms—for example a firm could support a school offering working opportunities to the people who successfully complete the vocational course; *develop proficiency in three European languages*, *treat capital investment and investment an training on an equal basis*, that is, encouraging by positive measures firms and public authorities which pay education particular attention.

However it would be the case to face the problematization with a thorough consideration on training politics, as the knowledge of the contemporary age requires the rethinking of the entire scholastic knowledge.

This is in line with a complex cognitive system directed towards the flexibility of knowledge, the fading of disciplinary boundaries and the extending of interconnections among cognitive worlds (although formative institutions are still anchored to abstract forms of knowledge and to reproductive teaching/learning strategies, which are not easily capable of managing the complex evolution of the cognitive knowledge). Difficulties of the educational system in confronting with the new requirements in competences arising from the "society of learning" highlight how urgent it is to rethink a possible new conjugation between "symbolic-reconstructive" teaching/learning forms and experiential teaching/learning forms using ICT.

The education of the mind is not a problem of pure application, but it is both a research and education program and a program concerning the living model of organization of the production processes and personalization of knowledge and experiences, which we generally call learning.

Living in the "global village", that is to say in an enormous and pervasive hypertext, even in their contribution to the development of this metaspace the new generations conform their learning styles, their lives, and briefly, their minds to this specific environment.

As Pierre Lévy argues (1996), the cyberspace is the support of intellectual technologies which amplify, exteriorize and modify several human cognitive functions such as memory (e.g., hyperdocuments), imagination (for ex. simulations), perception (for ex. virtual realities), reasoning (e.g., modeling of complex phenomena). Moreover such intellectual technologies promote new forms of access to information (e.g., surfing the Net, knowbots), new reasoning and cognitive styles such as simulation: a real industrialization of thinking practices which does not depend either on logical deduction or induction from experience.

ICT AND LEARNING PROCESSES

The attention given by the constructivist approach—by the culturalism approach (Bruner) as well as neo-piagetian and neo-vygotskian studies—to the intrinsic constructivity of thought and its rooting in the interactions of the individual with the world in which the individual realizes the experiences, become real in the enhancement of the individual dimension in the learning/teaching processes on one side; and it is based on the enhancement of its social dimension on the other side. Starting from these preliminary remarks it is possible to sketch an effective educational and training frame for the learning society, since the association of the individual dimension of every single student's building processes of his/her cognitive identity to the inter-subjective and cultural dimension allows the establishment and maintenance of a link between the self-constructed *autonomy*—defining the meaning on the free explanation of the training path of every individual—and the coconstructed *dependence*—defining, on the other side, the indissoluble/relentless rooting in a net of relations inside a community: in a system of shared responsibilities and mutual commitments (Rivoltella, 2003; Wenger, 1988; Varisco, 2002).

The culturalist approach, as well as a "culture of education"—linked with the achievement of mass education, didactic planning, and life-long learning offers—based on knowledge and competences confirmed the emancipating function of education (knowledge and competence are considered as the basic propelling element for individual and social progress) without omitting the contradictions and unsolved problems (referring to the Italian context) such as the high percentages of school drop-out, demotivation, waste of intelligences, new-illiteracy (Frabboni, 2004, 2005; Frabboni, Pinto, & Minerva, 2001; Trentin, 2001).

In this frame, with a raising cultural and social complexity—where the changing request, the recursion and the connection refer to the plurality and the problematic nature of reality, experience and thought itself—education is going towards specific knowledge and competences. It is about knowledge and competences able to support multidimensional, open and problematic view of the individual on reality and knowledge itself (complex, uncertain, and plural). This can be achieved through an educational planning that trains the thought to organize connections even between things that seem far and disconnected, that knows how