

People and the web: a challenge for Sociology¹

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Abstract

The web has become a new space for living and socializing where all is co-present and the opportunities for personal development multiply the access and selection mechanisms at the basis of social structure to the highest degree, thus creating new inequalities. Anyone can see that the birth of the web, accompanied by the development of modern communication technologies and by the resulting process of technological hybridization has brought about a radical change in social processes and relational systems. Our research focalizes on the role the educational institution can and must play in the new web society, starting with an analysis of the social impact caused by its penetration in a more ample scheme of relationships.

Premise

In the post-industrial society, variously defined as the risk society (Beck, 2000), the late modern society (Giddens, 1990), the post-industrial society (Touraine, 1998), we can observe a re-definition of living spaces, social flows and division of work. According to some observers (Levy, 2005), the new social actor at the heart of the 21st century is a cyborg, who moves with confidence in the new time-space dimension brought about by the introduction of the Internet; a dimension where time is timeless (Castells, 2001). The web has become a new space for living and socializing where all is co-present and where opportunities for personal development multiply the access and social selection mechanisms, thus also creating new inequalities.

The birth of the web, accompanied by the development of modern communication technologies and by the resulting process of technological hybridization (Marinelli, 2002), has brought about a radical change in social processes and relational systems. Economic, political and productive processes have been modified up to the point where the international geopolitical

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organization/establishment itself has been redefined. Modes of knowledge production (Nonaka e Hirota, 1997; Gherardi, 2004), organisation of work (Bonazzi, 2002; Butera, 2009) and work itself (Accornero, 1997) have been radically changed, just as there have been significant changes in welfare systems (Paci, 2005) and in mechanisms of socialization which have fostered and bonded modernity. Although some of the changing patterns of socialization have affected the educational process, we struggle to find new organizational forms to align with developments in the Information society.

The penetration of the web in society and its impact on the subject is the result of the interaction of four different forces :

Until recently, the debate surrounding the web has regarded mainly technical disciplines, while social sciences have often underestimated the impact of the emerging phenomena on education, learning and the appropriation of knowledge. Castells (2001) explains that the new social order made possible by Internet is based on three assumptions: increasing the value of information, Network and Globalization. In Castell's words, the web society is characterized by the importance of networks which determine a new social morphology, and the diffusion of a network logic which modifies processes of production, power and culture.

The information that is circulating today is responsible for both economic and knowledge development, and represents an essential raw material in this process. The distinctive feature of the informazionalist paradigm is that never before has man been in a position to process such a wealth of information. This has been made possible by the development of a set of technologies capable of governing the process on a global scale. The important factor is therefore the multiplication and extension of information and the possibilities offered by computing technologies today. The widespread success of these technologies becomes a prerequisite for the other two elements, Network and Globalisation. Network means that each individual is interconnected with a multitude of other places around the world, which introduces a third element - that of a global map of relationships reflected in every dimension of our activity (economics, production, work, socializing, etc.).

The study of the web and its repercussions on society and the subject requires multiple, interdisciplinary analyses. Among these, Sociology may act as a link, both in order to observe its complexity and to occupy a role in a scientific debate which has hitherto seen few contributions of this type.

With a view to contributing to an initial reflection on these themes, this paper focuses on the communicative dimension, especially with regard to education, which represents a fundamental medium for transmission and socialization through which the subject becomes part of a wider community.

The aim of the work thus focalizes on the role which the educational institution can and must play in the new web society, starting with an analysis of the social impact caused by its penetration in a more ample scheme of relationships. Computer and digital communications are the most direct expressions of this revolution, characterized by microelectronics, software and computation development.

The assumptions that guide our research are as follows:

The access to technology capital, by which we intend the resources made available by the network, may change the way in which the subject constructs his or her vision of “class habitus”, by virtue of how it can extend their network of relationships through a focused use of social networks.

The reflection developed in this study can be summed up as follows:

- a) educational systems (the school system) at all levels cannot ignore this reality;
- b) thus, it becomes necessary to come to terms with a completely new structure, language and pedagogical model;
- c) this innovation in educational practice and thought is a priority, and fundamental in reducing the gap in communication and values which divide the net generation and the adult world (Morcellini, 2002), the education system and society, digital immigrants and digital natives.

Given the polysemous and multidimensional nature of the study, different disciplinary fields from General and Education Sociology to Pedagogy and Communication Science are examined in an attempt to focus attention on the effects experienced by the subject and possible empowerment outcomes in his favour.

The reflection outlined here begins with a reconstruction of the most relevant interpretative opinions which define the post-modern subject, then moves on to his complex relationship with the web (2§), his link with education systems (3§) and some considerations regarding Education Sociology (4§) and its research applications in these areas.

The Subject in the Web

Extraordinary technological development and the loss of significance of traditional socialization structures have transformed our conception and use of communication in the post-modern era. With the new technologies, we have seen social environments evolve radically into communicative ones, a transformation which can be summarized using the concept of *intermediation* (Morcellini, 2003), according to which the advent of the new mass media systems has made drastically *immediate* communication possible, in contrast with the recent past when it was *mediated* by diverse social structures (the family, school, the Church). The re-dimensioning process of the impact of institutional socialization appears to be accompanied by the retreat of the school in the face of an ever more complicated didactical-pedagogical demand and a range of multi-medial technologies which are becoming more and more complex, pervasive and insidious. At the same time, the family is generally conspicuous for its absence. In fact, the parents lack sufficient knowledge of these technologies, and neither do they possess the necessary conceptual and cognitive tools to be able to understand and control the effects that this type of socialization has on their children in terms of personal development.

As already extensively theorized by numerous observers (Cesareo and Magatti, 2000; Morcellini, 2005; Maccarini, 2003), in today's post-modern society the spaces dedicated to living, socializing, personal achievement and the elaboration of a personal biographical pathway have been radically transformed, also due to recent changes in the normative-institutional sphere. Finding new stability appears difficult, despite numerous experiments and innovative experiences which unfortunately were not accorded adequate visibility.

Given the relevance of the changes which characterize the digital society, it seems necessary to ponder the repercussions that the new reality produces on the post-modern subject.

As highlighted by scholars of post-modernity (Giddens, 2001, Bauman, 2002, Touraine, 1998), the post-modern individual is at the heart of a complex network of relationships which no longer has a centre nor an apex. He is alone inside this spider's web of interconnections, weighed down by an overload of information, unable to depend on the reassuring process of accompaniment previously supplied by traditional socialization structures (family, school, the Church). The contemporary subject elaborates his auto-socialization pathway day by day, surfing through the variety of offers available. It is a self-managed socialization, which places the burden and the responsibility for success and failure totally on his own shoulders. We find ourselves in the presence of an errant

subject who elaborates his personal development through a multiple identity which is multi-localized, devoid of space and time. This identity can be elaborated only on the basis of aims and interests determined day by day within his own biographical pathway. Internet explodes these possibilities to the maximum degree in that it further fragments the identity through its multiple connections. With Internet, the identity loses the value of uniqueness imposed by the psychology of the twentieth century through the recognition of self, thus creating an identity scattered among multiple selves, synchronically and diachronically present in the web thanks to a single link. Some speak of liquid identity (Bauman, 2002) in order to underline the state of crisis which looms over the post-modern subject, which straddles many worlds without ever taking root in any, with evident repercussions on relationships as a whole, including those of a sentimental nature. The flexible man (Sennet, 2001), capable of continuously adapting to life, work, sentimental relationships and learning, has therefore become an icon of post-modernity. He is free from the bonds and constrictions imposed by tradition and the community in exchange for his integration into the system. This individual, without the dominant conditioning of single membership (community, the family, the Church), lives a new and different form of freedom, where conditioning is less manifest and assumes multiform aspects. Choosing among these, the person must necessarily determine his membership day by day through a ceaseless reconstruction of individual memory in order to counterbalance the growing weakness of collective memory, which no longer seems to find roots in social processes founded on the principles of impermanence, flexibility and interchangeability.

Personal choice, in all its facets, therefore becomes an expression of self, an assertion of value and of one's project in life. The paradox lies in the fact that one is obliged to choose, thus rendering vain any desire for freedom in that also the absence of choice is in any case a choice in itself, that of not acting (Ceruti, Bocchi, 2004). Today, the price of liberty from rules is part of the responsibility which the subject is required to exercise in his every preference, on the basis of criteria of relevance and contingency, and which becomes a kind of "road map" for navigating without sinking. Or rather, for navigating without being navigated by circumstances and the adversities in the system which today includes the airwaves in their widest form (radio, television, internet, mobile phones, etc.). Inevitably, we therefore reflect that education systems have long ignored the technological and social changes described here, except to denounce the condition of crisis and de-legitimization they suffer

from, and from which they have always defended themselves through isolation behind a barrier of self-reference. The new post-modern condition paves the way for a new form of inequality, in virtue of the fact that in the information society, the possibility of accessing this information in a competent and responsible way becomes an essential prerequisite for the active citizen, granting him access to opportunities and allowing him to take part in the construction of a new democracy based on the primary principles of inclusion, participation, equity and social justice.

The Net and Education systems

The education systems which developed within the linearity paradigm founded their entire pedagogical setup on the transmission model, the dominance of the written word and rigid disciplinary separation. This pedagogical model has survived more or less intact to the present day, despite the crisis caused by the advent of mass schooling, which confirmed its inability to promote individual progress (Bourdieu, 1970). The new *informationalist* paradigm (Castells, 2001), urges education systems to progress from stage one to stage two (Maragliano, 2004) by starting a radical and profound innovation process with regard to contents, methodologies, relations with the outside world, internal balance, technologies, etc. The problem which new technologies pose for schools is not only linked to the computerization of structures or the IT training of subjects, but also to the possibility of enabling the subject to acquire the range of social and multi-medial skills to access and inhabit the variety of *non-places* (Turkle, 1995) to be found on the web without being overwhelmed.

You cannot forget that the target students, the external environment and the school mission itself have changed greatly, so it is necessary to change the approach to teaching and teaching methods, otherwise we risk reproducing outdated educational systems in a technical form, which could also be even more alienating in the absence of a warm human relationship. The problem, as far as education and training are concerned, cannot be considered to be merely a technological issue (whether or not one possesses technology and is able to access it), but needs to be reassessed. Furthermore, human, relational and social factors conveyed through technology must be taken into account.

In fact, the use of the web and technologies is learnt through non-alphabetic codes and competencies (pre- or post-alphabetic ones) (ivi), and therefore the acquisition of technology and the development of knowledge/competencies/meta-competencies through experience of the web matures due to the *practical knowledge* (Bourdieu, 2006), linked to acting, manipulating, performing

and requires a cognitive learning system other than the linear and abstract one typical of the text. It can be assumed that the role of education today is that of integrating the two learning systems as, due to the surfeit of experience/stimuli/information available, it is believed that people must learn to systematize the knowledge acquired and, above all, to translate this wealth of knowledge and information into a range of competencies which can be transferred to diversified contexts and situations as suggested in the economy of knowledge (Rullani, 2009, Foray, 2006). In fact, Internet represents a *collective intelligence* space (Levy, 2005) elaborated by humankind. However, to access the *connective intelligence*, theorized by De Kerckove, (2005), which the individual can dismantle and reassemble when surfing the web, the subject requires an array of meta-competencies which can help him to express his individual subjectivity in full (Touraine, 1998) *within* and *through* the web and to use fully and completely the plethora of electronic tools and communication codes available today.

These codes never exclude each other, but are rather complementary.

It cannot be denied that the education system has turned a deaf ear to the profound changes in communications and the development of new technologies. The linear, sequential, specialist model which has informed modernity seems to have stayed unchanged in the face of the extraordinary socio-economic and technological changes briefly outlined here. These changes have determined a crisis due to the weakness of the pedagogical model conceived for an elitist school and transposed to the mass education of the 60s (Benadusi, 1984). According to pure Fordist logic, which strives towards standardization and large-scale production, mass education has meant a reduction in education quality, depriving it of elements which used to characterize it, such as relationships, mentoring, accompaniment and personal development and replacing them with a function limited to imparting superficial factual knowledge and certification (which some criticize as being *a waste of talent* and *inflation of educational qualifications*). Furthermore, it must be remembered that for decades the school has labelled mass culture as *second-class*, rejecting through sophisticated mechanisms of occult selection - deferred selection, scholastic hardship, dispersion, delays and repetition, etc. (Cobalti e Schizzerotto, 1994) - large groups of young people who have had access to modern mass schooling in the name of the equality concept and continue to do so today. In this way, an ever-growing gap between school and the socio-economic benchmark system, between school and society, between school and the new technologies has been created.

This state of apathy seems to have been shaken at last by the convergence of several factors:

- a) European policies which place great emphasis on the development and diffusion of the web, and which urge our country to adhere to their general guidelines;
- b) the mandatory introduction of the computer in schools, in compliance with the Stanca law and successive ordinances (e.g. Law 53/2003);
- c) the development of fourth-generation distance learning, which foresees the use of an e-learning platform for sharing and co-operation and the diffusion of the 2.0 Web;
- d) the domestication process (Jedlosky, Leccardi, 2003) of the new technologies which has allowed many professors, teachers and experts to experiment with new mass-medial teaching and education systems. The experience of *Mediaeducation*, the commitment of Garamond to producing and diffusing innovative technologies and methodologies for the school, and lastly, the growing importance of the Sie.l in the elaboration of a theoretical and scientific debate in order to represent a unifying force in this field and act as a link with the political sphere, can be cited as examples;
- e) the widespread diffusion of these technologies among ordinary people and especially among the young people of the *netgeneration*;
- f) the prevailing of the *Knowledge management* theory accompanied by ever-more accessible and user-friendly technologies.

What we see today is a renewed interest in these themes within education systems. It would be well, however, were this interest enhanced and flanked by:

- a) studies capable of throwing light on the new socio-anthropological condition which characterizes the post-modern subject in a social world populated by technological artefacts of increasing sophistication, both with regard to their hardware and software and to their interface management;
- b) accompanying policies capable of sustaining the delicate process of incorporation of the new technologies within education systems at every level, and, even more importantly, promoting the empowerment of the subject without losing sight of the centrality of the individual in relation to technological systems.

The Challenge to Education Sociology

The issues examined until now lead us to reflect upon several diverse factors. Firstly, it seems important to ponder how some of the cardinal concepts of Sociology (in particular, with regard to

education) can, or must be thematized in the light of the changes brought about by the advent of the old and new mass-medial technologies briefly outlined here.

The concepts of *cultural capital* (Bourdieu, 1970) and *linguistic code* (Bernstein, 1971) appear to be significantly and directly challenged by the new reality.

4.1 Thinking about cultural capital

As we know, Bourdieu goes beyond Marx and lists four different types of capital: *economic capital* (money, means of production); *social capital* (social networks); *cultural capital* (languages, taste, way of life) and *symbolic capital* (symbols of legitimization). As the author reminds us, these different types of capital can be converted into each other, in that someone who possesses economic capital can easily access cultural, symbolic and social capital and conquer prestigious positions within his social class, thus reinforcing his position. Each of these capitals is central to the possibility of accessing and using Internet technology. In fact, economic capital is necessary in order to access technological hardware and software and relative Internet connection; cultural capital (both formal and informal) is indispensable in orienting choice among the many options available and outlining one's own personal profile of access to the new technologies and their use, while *social capital* (Coleman, 1988) activated on the web (groups, social networks, learning environments, etc.) can extend the personal and family environment to a limitless degree, thus rendering the confines of the individual's social class less rigid. Lastly, certain symbolic capital can be spent on the relevance/recognition attributed to the areas of the web visited and used in defining the self-representation of individual digital identity, in which the multiple personal and professional facets that a flexible society imposes on subjects are often recomposed. In fact, technological capital does not derive from the mere possession of goods but also from the particular use made of them. One thing is the use of an Internet connection for keeping up-to-date, communicating or working, another entirely is playing video poker or visiting chat rooms and/or dubious websites. As scholars of the knowledge society underline (Foray, 2006, Rullani, 2009), even when the web is used for access/reproduction of information, this does not automatically mean learning, at least not until that information has been elaborated in such a way as to produce a learning process or the creation of new knowledge, i.e. until it has been contextualized and incorporated by someone who is able to act on it. As the author puts it, Internet competence in navigating and managing web sites could be

categorized as institutionalized cultural capital.

It would therefore be interesting to understand whether access to technological capital thus conceived modifies the concept of "class habitus", i.e. the kind of "collective subconscious" which links a certain category of person, and which is less and less identified with a social class in the traditional sense. As mentioned, the importance attributed to the actor in the construction of his personal biographical pathway renders its boundaries ever more liquid and instable. This factor, together with the instability of employment typical of contemporary society makes the categories to which people belong more and more indistinct and changeable. We can imagine that, the *chances in life* (Darhendorf, 1981) which everyone can aspire to are multiplied in function of the subject's capacity to govern and surf the web in a logic of constructing his own individual destiny. Taken in this sense, the web appears to be more ambivalent than ever, in that, as suggested in the theory of complexity (Tinti, 1998), it can present itself in the form of a spider's web of interconnections which multiplies our possibilities of acting, being and going, but also as a danger to be avoided or a labyrinth we could be lost in.

4.2. Thinking about linguistic code

The explanatory power of the *linguistic code theory* (Bernstein, 1971) has inspired many sociologists of education. According to this theory, socio-economic differences have a determining influence on language, also aiding academic performance. In his research, Bernstein finds that academic success depends largely on the verbal capability acquired during primary socialization that the subject is able to express.

According to the author, the reason for this correlation may be explained by the linguistic and social habits prevailing in different classes. These patterns characterize the children's language learning process in the relationship with their mother and other family members. In middle-class families, interpersonal relationships are geared toward developing the personality of each member and are constantly mediated through explicit language, coded and elaborated, paying careful attention to separation and distinctions. This kind of language is defined by Bernstein as "elaborated code." By contrast, in poorer households interpersonal relations are based around the role that each individual occupies within the same family (mother, father, son), rather than the person. In this context, language is not used to express their feelings, nor to represent their experience. We are therefore in the presence of a "restricted code", characterized by condensed and underdeveloped

messages, formerly dominated by a rigid structure, lack of formal elements and the presence of implicit and highly contextual meaning. In the era of ICT, Bernstein's work seems more topical than ever. The concept of restricted or elaborated code appears applicable also to the variety of codes/places that the subject is able to master. For communicative code we intend the variety of expressive codes linked to the old and new technologies that we are able to use.

This dimension of analysis may be further enriched by an element linked to the communicative code which can be *restricted* or *elaborate* according to the variety of expressive codes and opportunities (or *affordance*) which one is able to master, given access to the whole range of offers made available by the new information systems (text messages, i-pod, email, forums, blogs, social networks, BlackBerry, wireless, cable, etc.).

Compared to the past, innovation can be seen in the different relationships between schools and these communication codes. In Bernstein's analysis, the school system recognizes the elaborated language code functional to an education project. For this reason, young men from good social backgrounds often achieve academic success. However, (in a non-deterministic interpretation of the subject-system relationship) lower-middle class youths may achieve access to an "elevated culture" in which they can acquire an elaborated language code through the careful and meticulous study of the curriculum. In this way, while recognizing that they start disadvantaged, we can hope that particularly worthy individuals with strong intrinsic motivation may escape from the discomfort of their socio-cultural deprivation. Moving on to the relationship between ICT and the school, the issues becomes more problematic. In fact, the education system continues to use a restricted panel of oral and written communicative codes, according to a pedagogical tradition inspired by the paradigm of linearity and abstraction. Meanwhile, the Internet competences and skills/abilities related to a variety of communication codes now made possible by new media technologies are acquired outside the traditional education and academic circuits, given the difficulty that these have in incorporating new didactic-pedagogical methodologies (especially in Italy). However, there are training and work contexts where the use of these codes is much more articulated and combined day by day according to the objective to be reached by a specific message/content. The education system's delay in addressing this issue is therefore likely to reinforce the exclusion of lower-class young people by denying them any hope of improving their condition.

Because of this, it would be interesting to try to understand how this variable (with reference to

the possession of a more or less elaborate communicative code) represents a limit/opportunity in the construction of a biographical pathway, confirming or denying the subject's social destiny and class *ethos*, thus contributing to the construction of the particular knowledge and self-expression which everyone elaborates in the course of his life.

Not by chance Olson (1970) maintains that different languages, through the activation of a variety of mental processes, produce not only different cognitive skills but also diverse knowledge and representations of the world. In this sense, *old and new media* together, used as forms of education and instruction, are not only alternative pathways towards the same knowledge and with the same scope, but also define the acquisition of diverse contents, differently organized from a cognitive viewpoint, by widening cultural horizons and prospects for personal development for those who are able to make an informed choice. One can imagine how continuous interaction with a wide array of possible tools can contribute to the construction of a particular type of self-perception and relative social recognition. In other words, it could be opined that the new technological dimension makes an important contribution towards defining a diverse socio-anthropological condition for the digital native, among others, due to its social penetration and its ability to shape the space-time and relational dimension.

Following this train of thought, a third consideration emerges: the conviction that education, intended as integral development of the individual, is the principal route to empowerment, self-satisfaction and the consequent assumption of responsibility which is an integral part of active citizenship, notwithstanding the current crisis within the education system. For this very reason, we can agree with Greenfield (1985) that didactics capable of incorporating a "multi-medial" perspective and "multi-communicative codes" could replace the exclusive dominance of the printed book in schools. This dominance seems to answer the needs of the publishing lobbies rather than those of subjective growth and development, and its replacement would not only construct and/or recognize diversified intellectual abilities, thus facilitating more ample access by those who do not feel part of an abstract and linear learning system such as that embodied by the transmission model, but also develop the study of single disciplines from diverse viewpoints. In this way, the process of contamination and hybridization which today represents a privileged route towards innovation and progress would be favoured. Consequently, making a combined use of diverse expressive codes and multiple technologies could allow those who are able to use the web in an informed way as part of a personal development project to break free from the social immobility which characterizes our

society.

Conclusion

It is possible to imagine a series of issues which an articulated study of sociology, and in particular that of education, could investigate in order to better understand the relationship between the *subject* and the *web* within a more ample framework of correlations. In fact, with reference to the concept of social capital, it would be interesting to discover how the range of relationships activated through the web can extend the *cyborg's* original social capital and how it retro-impacts on his starting capital, thus modifying his sense of belonging and the construction processes of personal biographical pathways.

As far as symbolic capital is concerned, it would be useful to understand the different uses, meanings and investments made with regard to the various areas of the web visited, and how these contribute to reconstructing the self-representation of one's own personal and professional identity, individual memory and relationships with possible communities of reference.

In the same way, a study of how technological capital in the possession of individual subjects is used, and with what aims and expectations, with what interests and motivations could be made, giving us insight into how such capital contributes to redefining people's biographical pathways and above all where and how it is acquired in consideration of the fact that the role of education systems in this type of transmission is limited.

As mentioned before, it is often believed that the web is able to boost the subjects' *chances in life* due to their ability in surfing the net to access information. However, it could be of interest to observe how it increases the real possibility of subjective action, of building one's own biographical destiny, how it contributes to modifying one's self-perception in relation to the technological artefacts mastered and what impact can be perceived in terms of social recognition.

As far as education systems are concerned, a reconstruction of how pedagogical models are able to incorporate a "multi-medial" and "multi-communicative code" perspective within didactics could be carried out; if and how the combined use of diverse expressive codes and multiple technologies can foster the achievement of better results, the enhancement and sharing of knowledge, personal development and the construction of biographical pathways based on new affiliations. Starting with the re-composition of the experiences of those who use these tools in their daily professional lives -

professors, teachers and experts - it would be possible to retrace the underlying lines of change which run through this area of the education system.

From what has been said until now, it would therefore be possible to lay claim to the importance of social sciences in the study of the web, due to the complexity of the relationships which develop between the *subject and the web* and between the *subjects in the web*. In fact, with the development of advanced systems of communication and *knowledge sharing*, technologies have gone beyond the ability of academics to use them and ponder their social implications. We find ourselves needing to elaborate a new form of humanism in the field of techno-social relationships, with the aim of enhancing the person as such and recognizing the centrality of any development process. We begin to find a wider gap between a school for the most part unrelated to technological innovation and experimentation processes, and innovative education methodologies and a social system increasingly dominated by technology and a new and restricted privileged elite. Otherwise, we risk continuing to invest in ever-more powerful technologies instead of the people who can use them, as has been the case until now. Important investments in *hardware* (platforms, computerizing processes, sophisticated technologies, etc.) have been made to the detriment of what could be defined as *soft* with reference to people (updating, training, inclusion) in order to favour their full integration and upgrading. The training of a post-modern subject, able to move with cognizance in the global environment, cannot therefore exclude the ability of new education systems to tackle the web and its intrinsic potential and risks, and the new economy of knowledge (Rullani, 2009).

With reference once again to the economy of knowledge (Foray, 2006; Rullani, 2009), it is useful to remember that information alone, unaccompanied by an active cognitive process, is unable to create added value, while man's capacity for learning and experimenting produces new knowledge. Shifting our focus in this sense could help limit the risk of having extraordinary technological platforms, powerful *Learning Object Repositories*, exceptional potential and a multitude of people who cannot or do not know how to use them.

In fact, many people now agree that neither technology nor legislation alone can start up processes of change and improvement, which on the contrary are the result of complex and articulated social processes where diverse interests and rationalities, different values and visions of the world, meet and clash. Only through incessant mediation and accompaniment can real processes of change begin. This seems to be particularly true in education systems, where the organizational component appears articulated and absent, and the individual actions of the many people who make

up the variegated *education system* are more determinative than ever. A policy aimed at increasing support for the transformation into practice (Gherardi, Lippi, 2000) of technological innovation, particularly within systems of education is required, in consideration of the fact that the web represents the first vehicle of access to information and development opportunities for subjects, organizations and territories. The delay in political investment in this sense is particularly grave, especially in Italian system. Such an investment should intervene in defining precise policies for short, medium and long-term development on these themes: dealing with the issue of IT infrastructures in support of the web (investment in optic fibres and broad band), a normative framework for regulating all the unsolved issues linked to copyright and the sharing and distribution of knowledge through the web, recruitment policies, evaluation and career advancement of professors and directors/managers in different education systems, investment plans for launching the said systems on the web and updating human resources. All this cannot but represent an area for sociological analysis.

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