

Chapter 5.1

Education and Organization: ICT, Assets, and Values

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ABSTRACT

The goal of this chapter is to define the problems a school can have when it implements technology in education. This phenomenon is explained according to theory of organization, and especially Norman's perspective. Norman's theory stated, in fact, that organizations passed from fordist and tayloristic structures to the service management paradigm; finally, nowadays, they build values together with consumers. We try to show how this transition is also present in schools' implementation of ICT. In doing this we criticize the deterministic solution (which says that implementing technology changes everything and produces innovation) and adopt a systemic vision with the characteristics of presumption, community, and value constellation.

THE INFORMATION SOCIETY AND THE SCHOOL

The information society today is one of the scenarios most frequently described by media. They speak about it as the great new revolution, after the revolutions of the alphabet and the press. The essential part of this revolution is technological and relates to new and original ways of elaborating and transmitting information. We can describe it according to three indications (Rivoltella, 2003a):

1. The management and transfer of large quantities of data (with the problem of finding a selection method for discriminating between useful and useless information).
2. The irrelevance of the place in communication, because of the real time interaction made possible by the Internet (i.e., videoconferencing allows speakers to communicate with each other without being in the same place).
3. The great speed of processes, whose acceleration is one of the basic categories for

understanding our socio-cultural environment (Virilio, 1995).

In school, the main importance of this revolution is its effectiveness; that is, its capacity to impact school systems that brings a deep change in their configuration. The most common words describing this process are: modernization, integration, innovation, and extension. In other words technologies can aid systems to renovate teaching and learning practices (modernization), build up networking systems among different schools (integration), actualize structures and processes (innovation), and also make the personalization of learning possible outside the school building and school hours (extension). We can imagine a great future where technologies can lead schools to become better.

Into this quite optimistic scenario it is possible otherwise to highlight almost two important problems. Firstly we can discuss the nature of this revolution (Wolton, 1999, 1986). But is this true? Is it enough to introduce technologies in the school to automatically have innovation and modernization in teaching? Isn't there, under this idea, a homeopathic conceptualization of technology (that is, to think that technology is able to transform all processes in which it is implemented)? This is the case the sociologists named the "auto-coming true prophecy" (Merton, 1949); that is, to think that ideas frequently presented as possibilities of the future will come true.

Under this "prophecy," there are two possible risks (Rivoltella, 2003b):

1. The risk of technological determinism¹; that is, the consideration of technology outside its use and context.
2. The risk of changing all for changing nothing, as Negroponte (1996) says, citing (perhaps without knowing it) a famous scene of *Il gattopardo*, a novel by Filippo Tomasi di Lampedusa (from which Luchino Visconti made a memorable movie).

The second problem is the same idea of impact. The European Council, in 1998, in Strasbourg, devoted an international seminar to this theme: *The Impact of New Information Technologies on Schools: Issues and Problems*. Here, the idea is that technology runs throughout schools: a natural process, perhaps one that is out of managers' and educators' control. The author does not agree with this last assertion and reports the following example: the invention of stirrups was surely important in the Middle Age, and probably without it we wouldn't have the Cavalry; but, according to Levy's (2001, p. 29) ideas, Cavalry that did not depend exclusively on stirrup's invention. Technology is surely important, but it needs to be related with other developmental factors and driven by an organizational perspective. So, more than impact, we can talk about a systemic relationship among technologies, individuals, and context variables.

According to this systemic point of view, the aim of this chapter is to propose to educators a tool by which they can think about the evolution of organizational models the schools can adopt to drive technological innovation. I found this tool in the theory of organization, particularly into the theory of the Swedish economist Richard Norman (2001). Developing my reflections I hope to not respond to school managers and educators, but only to make a critical review of consolidated practices and possible solutions.

MODELS OF ORGANIZATION: AN EVOLUTIONARY PERSPECTIVE

According to Norman, we can understand the evolution of organizations with three main paradigms: the industrial paradigm, the service management paradigm, and the systems reconfiguration paradigm.

The industrial paradigm—from the end of the 19th century to the '60s of the 20th century—is based on Fordism and Taylorism. The principles

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