

The Teaching Profession: A Networked Profession in New Networked Environments

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Abstract: The information and communication society is a networked society. We reflect on the concept of a network and identify some profound changes in society.

In such a society, knowledge is changing, new knowledge appears, and the structuring of knowledge is evolving. Access to knowledge is changing. The networked form of knowledge makes an evolution of educational systems and structures towards a networked organisation necessary. Complexity, which is a key characteristic of new knowledge in the new society, is reinforced and structured by networks.

The teacher's role is becoming more and more complex. We analyse some of the ways it is evolving, see how new technologies force us to confront the core roles of the teacher and reinforce some specific aspects of his/her profession, particularly the role as a mediator, and the role in the development of the collective intelligence.

The teacher is now dealing differently with time and space; he/she uses new learning environments, which are more global and link pedagogy and school life within its whole. The growing complexity and the changes in education lead not only to an evolving teaching profession, but also to new teaching professions.

Starting from different possible scenarios for the school of the future, we suggest possible scenarios for the teacher of the future, and see the teacher's place in national policies.

ICT makes teaching more and more a profession, not only a vocation. The question now is not only to improve education with the help of ICT, but also to transform education and learning, as society is transformed.

Information and Communication Technology (ICT) has a profound impact on Society and on Education. ICT not only provides new and supplementary tools able to help improve teaching or learning; it profoundly transforms Society, Education and Knowledge. The teaching profession is at the core of such changes, and is itself transformed by ICT. The role of the teacher is changing, the way the teacher works is changing. We have to distinguish the essential components of the teaching profession, the ones that are stable, and the ones that are changing. And we have to try to anticipate the main changes, in order not to be merely subjected to them, but to master and direct them.

1. A NETWORKED SOCIETY

A major change brought by ICT is networking. Most of our organisations, which were before of a hierarchical type ('tree-type' or 'pyramid-type'), are now moving to networks.

A network is a set of nodes and edges, the edges linking the nodes. It is a complex organisation, and a continuously evolving set. ICT has hugely increased the possibility of linking people, and linking objects. A complex network is progressively being elaborated, making our society a networked society. The Internet is one of the visible parts of the networked society; it links mainly computers, and, behind these computers, sites and people.

A network has important properties. The main one is that there are always several paths for going from one node to another (in a pyramidal structure, there is only one path from one point to another).

Let us look at some examples:

- Accessing an item of information in a book. In a traditional organisation, one had to use a 'hierarchical' path, going through bibliographies, library directories, name of the author, title of the book, table of contents, chapter number, page number, etc. In a networked system (like the Internet and with the use of search engines), one can access directly one word, one concept, one sentence in a book, without even going through the title of the book or the author's name.

- Communicating with people in a hierarchical system requires knowledge of the structure, the hierarchy and the rules. You can communicate with some people through other people, you often communicate with a 'function', not necessarily a person. In a networked system with tools like e-mail, one can communicate directly with a person, without knowing his/her position, his/her location, etc.

- Our educational systems are organized on a 'pyramidal type' basis: at the top, the Minister of Education, then Directors, Inspectors, principals,

head teachers, teachers, pupils.... The pupils are organised in classrooms. One can think that in the networked society, such an organisation cannot be satisfying, and that new types of organisations will appear in educational systems, based on network principles.

Networks are permanently enriching and are becoming increasingly complex. Let us consider the Internet: Each web site is usually built according to a 'tree' structure. But one can create many new links, enriching the circulation in the 'tree', and each web site progressively becomes a kind of network between pages, resources, information ... and the set of all web sites makes a huge network, whose complexity is permanently growing, and with new nodes and new edges appearing at each moment.

A network can be considered in different ways. One can network people, and thus constitute a group of people who are connected in a network system. One can network information, and obtain a huge Information Network. In reality, we often think in a mixed way, linking people with people, people with information, information with other information.

There is not only one network, but there are many of them: local networks, particular networks ... they can themselves be networked, in order to create bigger networks, up to the 'global network', the network of networks...

For technologists, the links are important. For users, it is the nodes that are important: the people to connect, the information to connect. Merckelbach and Dupas (2002) suggest the metaphor of the spider and the giraffe. In a spider's web, what is important is the threads, and in between there is only emptiness. But if we look at a giraffe's skin, we see stains with lines in between, and it forms a network in which the important element is the stains. A network aims at connecting people, connecting information, and what is connected is more important than the edges connecting them. But the way they are connected is important as well: it creates proximities, it creates sub-networks, it creates new relationships.

In all domains, the network structure of society has consequences for the economy, social life, leisure, politics, etc. In education, it has major consequences, for knowledge itself, for the way one can access knowledge, for educational systems, for teaching and learning, and particularly for the teaching profession.