Chapter 8.15
Knowledge Management as the Future of E–Learning

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PROBLEMS OF EDUCATION IN KNOWLEDGE SOCIETY

Since technological changes are touching many aspects of today's society, education cannot stay behind; in a world where information is the key to progress, the education of its citizens should not be based on expositive means alone (Adell, 1997). The inevitable increase in complexity and quantity of the information that is available and necessary has led to a need for continuous learning. Information handling requires a profound transformation of learning and teaching methods: from a model in which the teacher is the monopolizing agent and the authorized representative of knowledge, we must move towards a model that offers the student room for individual exploration and self-learning. The student needs to build relations, discover the process from within, and feel stimulated to draw his own roadmap (Piaget, 1999). This way, he will not only learn, but learn to extract the relevant information, that is to say, he will "learn to learn" in actual society.

This kind of learning can only be obtained through action strategies that are not perceived as restricting obligations, but rather as interesting learning options. Content, for instance, should be represented not as an object of study, but rather as necessary elements towards a series of objectives that will be discovered in the course of various tests.

Another characteristic of actual education is that students come from different environments and have different ages and education backgrounds, which make it more complicated to integrate them into one single group. Real personalized attention would require many more teachers and much more time. Add to that the increasing demand for continuous education, with flexible timetables and subjects, and it becomes clear that the current programs are much too rigid.

Tele-education platforms try to meet these needs by providing individualization, physical and temporal flexibility, and a higher level of student implication. However, the contents of these platforms remain the same as those of traditional systems, even if their presentation format is adapted, and therefore they do not substantially contribute to the improvement of the learning process (Martínez, 2002).

KNOWLEDGE MANAGEMENT IN EDUCATION

The learning process consists of a modification of our conduct that, by extracting knowledge from acquired experience, enables us to tackle problems (Wiener, 1967). This definition highlights the two basic aspects of all learning processes: knowledge acquisition, and the experience that leads to it (see Table 1).

The way we can access knowledge strongly depends on how it is stored. According to this criterion, three types of knowledge can be distinguished (Wiig, 1995):

- Tacit Knowledge: Knowledge that is so much embedded in the individual's brain that he himself cannot explain it. Since this kind of knowledge is only accessible by observing

Table 1. Summary of current systems for the representation, management, and storage of information

Representation System	Stored Information	Applied Transformations	Obtained Information
Knowledge Management Systems	Explicit knowledge plus mechanisms to share and acquire tacit knowledge	Meetings, put in common knowledge, relations between knowledge	Explicit knowledge as object and process Possibility of acquiring tacit knowledge
Data Mining	News	Relations that can obtain rules or categories	Explicit knowledge as object and process
Knowledge-Based Systems	Data, news, and relations	Rules for making deduction Transformations of frames	Explicit knowledge as object
Databases	Data	Consults: filters with data	News

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