Currently, one of the major discussions taking place concerns the lack of a clear coherent definition, by the different actors involved in classroom and distance learning, of the pedagogical approach that each of them defends and follows in terms of theory and practice. When those involved in the educational process are asked about the pedagogical approach that they defend, the answers given nearly always lead to the defence of critical teaching. Interactivity, cooperation, collaboration, dialogue, exchange, knowledge production and group communication are constantly stressed in speeches and projects, although few programmes actually incorporate pedagogical strategies that guarantee such practices. These terms are frequently used without any corresponding commitment to them in practice. Very often, the pedagogical method used involves transmitting information under the guise of a new approach based on the use of new communications and information technologies to disseminate information. (Bochniak and Torres, 2003)

The methods used by current e-learning programs rely very little on interactivity. In this form of transmissive pedagogy, the student “receives” the content by means of a continuous monologue in which he does not participate, which gives him little opportunity to express himself and which he can neither modify nor even criticize. Dialogue and group communication, together with interaction, are highly valued in current educational thinking, although little used. Interactive exchanges between learners form the basis of methods currently advocated because they promote meaningful learning. Such learning only takes place when the student participates actively in the process of building his own knowledge (Henri, 1992).

Even institutions which develop distance-learning programmes based on the use of new technologies in an integrated-media model still face challenges related to the virtualization of teaching.

Faced with this new knowledge society and with so many socioeconomic and technological pressures arising from a globalised world, methodological solutions need to be reviewed. At such a unique conjuncture, with unprecedented resources, the opportunity of making learning situations more flexible and of advancing, enriching and socializing them must not be missed.

Educators are seeking new methodologies to respond to the demand for personal education and knowledge acquisition and production.

A study by Laister & Kober (2008) identified a number of reasons for the success of Collaborative Learning (CL) as a teaching approach. Of these reasons, the following stand out:

- the effectiveness of both short-term learning, in terms of the subject / material being studied, and long-term learning, in terms of cognitive skills and self-esteem (both considered by many theoreticians as necessary conditions for the development of both independence and skills needed for long-term learning).
when Collaborative Learning is compared with individual and competitive learning scenarios, it can be seen to help students perform better by increasing their ability to resolve problems and helping develop personality traits that will be of benefit to them in both their academic and professional lives.

Collaborative Learning empowers the individual and gives him/her the skills to live a more independent, collaborative and pleasant life.

Collaborative Learning thus offers the possibility of methodological innovation, as it is “based on the notion that knowledge construction is basically a social event, and adequate collaboration is particularly important for learning complex knowledge and higher order cognitive skills.” (Lehtinen et al., 2001, p. 24).

Therefore, it seems clear to us that Collaborative Learning meets the demands of the knowledge and information society, in which the ‘information explosion’ and the demands for greater and more varied supply make it necessary to convert new knowledge produced by science and technology into educational resources and content as a matter of urgency.

The technological advances that have taken place in this new knowledge society have made it much easier both to access and to disseminate this knowledge. Nevertheless, in spite of the extraordinary advances in communications and in all areas of knowledge, the enormous amount of information available has given rise to concerns and worries among teachers the world over regarding how to understand and learn about the information that is being disseminated and use it to construct knowledge.

Many institutions and organisations, which also face the same pedagogical challenges and seek ever-greater educational excellence and quality, believe they have found a technique that may help them in their search: the construction of concept maps.

A concept map is a graphical representation of concepts and propositions. For Boxtel, it “represents the main concepts and relationships within a domain. It is a network in which the nodes represent concepts, the lines linking the nodes represent relationships, and the labels on the lines represent the nature of the relationships.” (2002)

Concept mapping is a powerful learning and teaching technique. Based on Meaningful Learning, one of Ausubel’s most important principle in his theory of Cognitive Learning (Cañas and Novak, 2008), learners learn meaningfully by anchoring new concepts and propositions to ones they already know.

In the light of the above and considering our experience in the development, research and evaluation of methodologies that encompass the latest educational trends, we felt that a publication aimed at educators which relates the innovative collaborative learning methodology to the technique for constructing concept maps would be of great benefit and relevance.

Therefore, in the first two chapters in section I, we present the methodologies involving the use of concept mapping and collaborative learning developed by Torres (2002) in her Doctoral research and by Marriott (2004) in her Masters research which inspired the production of this handbook.

The subsequent chapters and sections interweave theory and practice. They focus on authors’ innovative experiences in the face-to-face, blended and distance learning modes of delivery, at four educational levels, namely pre-school, primary, secondary and higher education, reporting on the complex challenges and demands of education in the digital age.

Thus the Handbook of Research on Collaborative Learning using Concept Mapping can easily meet the aims it set out for. How? With accounts that skillfully blend theory with practice and which allow for the adaptation of the methodologies utilized into other knowledge domains.

Patricia Lupion Torres and Rita de Cássia Veiga Marriott
Editors
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