Chapter 11
Communicability Era: New Professionals for Interactive Systems

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ABSTRACT
In the current chapter are analyzed the main reasons for which it is necessary to count with a new profile in design, realization and assessment of the interactive systems. The whole of the observations and proposals is the result of theoretical research, experiences in projects of interactive multimedia systems in the public and private Spanish and Italian university context in the last two decades. Through all this time it has been seen how the lack of training among the professionals in the interactive systems, especially in some university environments, not only has increased the production costs but the detection of a low quality of design and communicability has discouraged the interaction of the novel users with these systems. One of the goals that we set ourselves is to determine the set of necessary knowledge and/or experiences that these professionals must possess to carry out satisfactorily the interactive systems of the present and the future, in the least possible production time, with reduced costs and a high final quality. Obviously, the key factor of these shortcomings lies in the university educational systems and in the organization of the contents in the study plans, leaving behind the business factor of university teaching. Therefore, we have structured the current work in the following way: study of the evolution of the multimedia systems, anchoring of the notions related to communication, determination of the main areas of knowledge of the future professional, analysis of the software quality, signalling of the business-oriented factors in the structuring of the university study plans, especially related to degrees, engineering titles and masters.

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INTRODUCTION

Human communication takes place when a person or persons transmit something to others through signs that depict, express or substitute what is intended to be communicated. This use of signs is intentional in order to cause a more or less predictable effect and to prompt a congruent answer, but its meaning has to be convened upon and shared. A message has ambiguity and redundancy: the first is generated by using concepts which denote more than one meaning: in such situations and in relation to the used language (in a text, but not only in these), another term must be sought which avoids confusions, so that the linguistic bi-univocal relationship of signifier and significant is as straightforward as possible and avoids confusing connotations (Cipolla-Ficarra, 1994).

This problem multiplies itself when several languages are used in an interactive multimedia system. A method followed by some designers is to be redundant in the messages, that is, to repeat the same thing in several possible ways so as to avoid ambiguities. This entails explaining twice or more times what one is trying to present with the different communicational resources, what may be positive in educational processes, but counterproductive in processing time and in the space occupied in the off-line information supports, for instance (Cipolla-Ficarra, 2005). Cutting down the ambiguity of the message as well as its redundancy is a basic formula of gaining speed and space: a good strategy is to use images of universal meaning which serve as anchor to what is being shown. It is necessary to count with good designers not only from the aesthetic or artistic point of view, but also of the software. Nevertheless, both ambiguity and redundancy are issues pending of resolution inside the elaboration processes of contents for the interactive systems.

The information of a multimedia interactive system reaches the user in three basic ways: text, images (static or animated) and sound. These are combined among themselves, but some of them prevails over the others at specific moments and according to the part of the content that is interacting, for instance, in a e-learning system. However, it has been seen that the visual component prevails over the sound part, whether it is in the shape of text and/or images. The images bring about a bigger effect on the user (Balakrishan, Fitzmaurice & Kurtenbach, 2001). Cinema, television and personal computers have generated a whole visual culture throughout the 20th century (Reves & Nass, 1998). Among the images, the animated ones are those that have a greater acceptance by the user and the virtual community and/or social network.

The computer animations that follow the rules of cinema productions and digital films have a peculiar realism strength for the communicational process. That’s why, with the exception of hypertexts, most of the current interactive systems incorporate 2D animations and/or 3D, (in spite of the room they take up in storage and the quality problems of the algorithms that regulate compression and decompression). All of this has its origins in the classical audiovisual media: cinema and television. The human being of the second half of the 20th century is audiovisual par excellence (Reeves & Nass, 1998). In the nineties with the computer in the classroom (Piaget, 1993), the bidirectional interaction in the communicative process has been boosted (Kraemer, Dedrick & Sharma, 2009). It is important to know some details of that evolution because it allows one to establish a before and an after in the needs of the information societies, especially when we talk about professionals of interactive qualitative communication.

EDUCATION, COMMUNICATION AND NEW TECHNOLOGIES

Education is one of the cornerstones of the growth of societies (Shih et al., 2008). The technology in the classrooms in many institutes of the eighties
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