

Human-Computer Interaction and its Implications for Teaching

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Prologue

The Human-Computer Interaction (HCI), since its appearance in the scientific context has involved a set of applications that have improved the quality of life, over time has allowed the establishment of scientific subdomains that correspond to the nomology of Human-Computer Interaction among which we could mention.

- Experience design and user interaction
- Computer and ubiquitous
- Computer Aided Learning and Collaborative Work
- Computational Cognition
- Virtual and Augmented Reality
- Multimodal interfaces
- Surfaces and interactive devices
- Technology for intelligent environments

According to the Association for Computer Machinery (ACM), HCI is the discipline related to the design, evaluation and implementation of interactive systems for human use, with the study of the phenomena involved. Currently, one of the knowledge areas where HCI has a lot of impact is Education, from the analysis of user experience, we find the various perspectives that focus on the interfaces between the human user and the computer, which greatly affects the usability of any computer system that involves the human user[1].

HCI currently plays a vital role in modern intelligent systems, such as brain-machine integration, recognition of human actions, applications in medicine or inclusion, another perspective has to do with visual human-computer interaction to make decisions in the various computer applications.

In education it is more recurrent to consider the analysis of the interaction with the interface that allows connecting students and teachers with the computer, focusing on teaching necessarily implies talking about the fields that correspond to teaching or pedagogical practice: knowledge, organization of learning, classroom climate, media and materials and evaluation, are the fields or areas of pedagogical practice where applications are generally made, considering the peculiarities and characteristics of each subject, including educational levels, in many cases these applications have been

successful, the purpose has been achieved from the pedagogical mediation or even more when a professional has participated in the design of the application, it is understood that the application has been built based on recommendations and technical specifications corresponding to this area of knowledge, then it is evident and tangible the user-centered applications, so necessary at this time, this variation only ratifies the multidisciplinary nature of the activities to be developed where it necessarily involves the disciplinary domain of the area for which the application is being built.

As it is previous said, the HCI was built on the foundations planted by other subjects that had had to deal with the problem of user interaction with interactive system. This is exactly what had happened with educational Informatics. In fact, the need to improve the user interface had long been experienced and developed by designers of computer systems for instructional purposes. In this sense, the interfaces developed for some tutor systems, for example, continue to be a reference in interface design in general.

The role played by the user interface with the educational systems has been analyzed a priori in the literature, [3] has posed the following questions in this regard:

What level of interaction is essential for effective learning?

What is good interaction? How can we achieve it?

What does real time interaction contribute?

Is it worth the cost?

One of the three columns that support the HCI, the user, the computer and the task to be carried out, it is the latter that most clearly identifies the development of educational systems. When the task includes training, it is necessary to consider the distinctive aspects of this activity in order to develop suitable interfaces. In such a way that pedagogical theories and practices are intertwined with interaction methodologies to produce really interesting educational systems

Currently the teaching-learning binomial is carried out in different modalities training: face-to-face, distance, online and blended-learning. In whatever modality teaching is applied, ICTs have become essential. E-Learning is the provision of educational programs and learning systems to through electronic means, relies on the use of a computer or other device electronic (for example, a mobile phone "Smartphone" or tablet) to provide educational material people. Distance education created the basis for the development of e-Learning, which comes to solve some difficulties in terms of time, synchronization of agendas, assistance and travel, typical problems of traditional education. E-learning uses various tools and media such as Internet, Intranet, CD-ROM, presentations multimedia, etc., the contents and the pedagogical tools used diversity according to the specific requirements of each individual and each organization or institution. The combination of computing and communications resources aims to generate a environment conducive to learning.

These VI Jornadas Iberoamericanas de HCI develop the variety of applications and possibilities that the Human Interaction with the Computer is currently present, but we emphasize this orientation to education by the abrupt change generated by the COVID-19, since it is evident the centrality in the user in all research presented.

References

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