Instructional Software for Biochemistry Education

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In the last decades the world has witnessed a revolution in the expansion and access to knowledge, which has dramatically changed the relationship between labor and production. According to UNESCO (United Nations Educational, Scientific and Cultural Organization) and ILO (International Labor Organization), in the "age of information" it is fundamental that Higher Education Institutes educate professionals capable to update their knowledge in the course of professional life. The so-called "life-long learning" is pointed out as a request for creating and maintaining jobs, and for supporting the development of nations as well. In such context, Biochemistry is a field of knowledge which has outstandingly expanded its boundaries. Preparing the next generation of biochemists for the "age of information" requires the development of cognitive skills as an essential educational goal concerning graduation courses, which have been historically limited to the exposition of contents. The achievement of such objective depends on many factors, including the development of suitable instructional materials that can improve the teaching and learning experience. This conference deals with the development of instructional software at the crossroad of Educational research, Informatics and Biochemistry. The investigative approach leading to the development and improvement of instructional software for Biochemical education will be discussed on the basis of the following issues: i) motivating questions to software development - teaching and learning problems; ii) development of digital content: specific content, interface and interactivity; iii) evaluation of the software’s instructional efficiency; iv) examples of softwares which have been conceived according to the discussed methodology.