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IMPLEMENTING INTERDISCIPLINARY LINKS WITH THE NATURAL SCIENCES IN THE TEACHING OF CHEMISTRY

Annotation: It is possible to study any topic without making a connection with the teaching materials of different disciplines it's not. For chemistry, the subjects of this cycle of natural sciences: biology, geography, physics, ecology, life security and so on. The content of the chemistry course and the integration of other science material is up to you allow you to effectively solve the problems of teaching science in education.

Key words: 'interdisciplinary', biology, chemistry, computing, mathematics and technology, physical chemistry, specific industry/ medical/ environmental/academic or research field.

With today's evolving science and technology, there is a desperate need for retail ring science education. Whether biology or physics, chemistry or computing, mathematics or engineering, one should seek for interaction between disciplines not only at research level but also at teaching levels. The term 'interdisciplinary' is increasingly gaining meaning for the new generation of researchers and educators as the novel approaches to all areas of science are based on multidisciplinary methods. Fields such as medical physics, biochemistry, computational biology, bioengineering, physical chemistry, just to mention some, are a valid proof of the need for interaction between sciences. Often students are confused regarding their future, as they are not aware of the applicative side of their chosen discipline. Furthermore, both undergraduate and postgraduate students encounter frequent gaps in their knowledge because of the lack of coordination and interaction between disciplines. These hiccups in the educational system could be overcome through a better organization of curriculum. An example of interdisciplinary approach in science education is medical physics. A medical physicist must have a multidisciplinary vision of physics; otherwise the goals of this developing area are not met. The aim of the present talk is to illustrate the branching science of medical physics, the need for its correlation with molecular biology, chemistry, computing, mathematics

and technology, and to underline its ultimate goal: to be of service, as an adjuvant field, to the novel areas of medicine.

Interdisciplinary education has a crucial role in science teaching, because it supplies new resources for the progress of science and technology. Fields such as medical physics, biochemistry, computational biology, bioengineering, physical chemistry, just to mention some, are a valid proof of the need for interaction between sciences. The purpose of the interdisciplinary approach is to dissolve the boundaries of various areas of study and encourage learning across the curriculum. The key factors of an interdisciplinary education are the application, association, integration and transfer of knowledge. Learning skills in isolation is not a viable approach in modern education. Through interdisciplinary teaching the students can experience the applicative part of what they are learning and also see the value of it. Together with constructive and critical thinking, effective learning is encouraged as well. Both undergraduate and postgraduate students encounter frequent gaps in their knowledge because of the lack of coordination and interaction between disciplines. These hiccups in the educational system could be overcome through a better organization of curriculum. An interdisciplinary course syllabus should be defined and structured in conformity with the needs of the specific industry/ medical/ environmental/ academic or research field. In view of the fact that, for example, a medical physicist in his/her future career will need anatomy, cell biology and nuclear physics knowledge, the academic curriculum for medical physics must include these subjects. However, it is essential to have the subjects thought through and taught with medical physics in mind, without deviating from the set goal, which would be easy considering the

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chemists, geneticians, radiation safety officers and medical doctors involved in the teaching process, illustrating the imperative need for the interdisciplinary approach (see figure 1). Clinics, hospitals, as well as industry expect to hire 'educated' medical physicists, with a comprehensive background knowledge meant to cover all the major aspects of radiobiology, health physics, radiotherapy, protection against radiation. This thoroughness can only be achieved through careful planning of the curriculum and well trained educators with broad visions and knowledge.

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