

Introducing atomic structure to G.C.E. Advanced Level students through their active participation in the learning process and the development of a teacher's guide

Atomic structure, an important topic in the G.C.E. Advanced Level chemistry syllabus, includes concepts that are difficult for students to comprehend, and even experienced teachers face difficulties in teaching this section. In order to identify these difficulties a survey was conducted, among students and teachers. Students' questionnaire consisted of the questions which were focused to identify the abilities of applying, analyzing and synthesizing subject-matter into new situations, while the teacher questionnaire was aimed at understanding the difficulties experienced by them in teaching this sub unit. Lack of practical work and suitable analogies/models were identified as some of the important reasons for these difficulties.

These studies were incorporated into a teacher guide for the sub-unit on, "The existence of energy levels in an atom" under the unit on "structure of atom" in the A/L chemistry syllabus. Here the results of the survey were employed along with the current knowledge of this section. This teacher guide employed along with the current

knowledge of this section. This teacher guide emphasizes learning through active participation of students. Model building to understand shapes of orbitals, introducing an experiment on the spectra of elements and plotting ionization energies to identify trends are some examples of proposed classroom activities which facilitate the active learning process. Also, this teacher guide includes pretests, classroom assignments and self-assessment questions. Teachers will be able to introduce this sub in an interesting manner to students by using this teacher guide to overcome their difficulties.