

**USE OF SUPPLEMENTARY MATERIAL TO ENHANCE  
LEARNING ELECTRONIC ENERGY LEVELS OF ATOMS:  
A CASE STUDY WITH GRADE 12 STUDENTS IN MATALE  
EDUCATION ZONE**

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“Electronic energy levels” is the most important subunit that lays the foundation for chemistry learning in G.C.E. Advanced level classes. Teaching-learning process for this unit is very difficult because this subunit consists of abstract concepts and principles. As this subunit is constructed based on theories and mathematical calculations and unavailability of practical facilities in schools, it was suggested by many teachers and students to prepare an additional material for leaning. It was expected to introduce an effective teachers’ guide to provide necessary guidelines on important characteristics of atomic structure from Bohr’s theory to quantum theory. A supplementary guide was prepared using the information gathered through diagnostic test and questionnaire for teachers and students. Three schools in Matale district were selected and students in each school were grouped as Experimental group and Control group. Experimental groups were given the supplementary learning material. Teachers were trained to use the supplementary learning material in these classrooms. Control groups were allowed use their own traditional method.

Classrooms were observed continuously and teachers and students were interviewed. Students were assessed with a post-test after the subunit was taught in these classes. Marks of both groups were compared and analyzed based on school, gender, medium and urban/rural basis using t-test. Students of experimental group performed actively in the classroom. Teachers stated that teaching was much easier when they followed the supplementary material. Achievement of experimental group in post-test was higher than the control group.