

INTRODUCING AN ACTIVITY BOOKLET TO ENHANCE THE KNOWLEDGE ON INORGANIC QUALITATIVE ANALYSIS IN G.C.E. (A/L) CHEMISTRY: A CASE STUDY IN NUWARA ELIYA EDUCATIONAL ZONE

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It is obvious that education in the plantation areas has been a weak component in our national education system for various reasons. In fact, there exist meager educational facilities in these areas. In the case of science education in the plantation areas, Nuwara Eliya district, in particular, the quality of science education persists to be poor. The analysis of the contents in the evaluation reports of the chemistry papers in the G.C.E. A/L examinations shows that students have difficulty in answering questions that are designed to evaluate their knowledge on inorganic chemistry practical activities based concepts. It is therefore deemed necessary to do a study on inorganic chemistry.

This study mainly focuses on identifying problems faced by G.C.E. A/L science students in answering practical activity based questions on inorganic qualitative analysis (IQA) in Nuwara Eliya educational zone. Questionnaires were administered to three chemistry teachers of the A/L classes and to the science students of two 1AB mixed type Tamil medium schools in Nuwara Eliya educational zone in order to find out the problems in teaching and learning the concepts of inorganic qualitative analysis. In addition, pre-tests were also administered to grade 13 science students of the two schools to identify their problems in the selected unit (IQA) in inorganic chemistry.

Responses to the questionnaires revealed that students had difficulty in answering practical based complex questions and questions related to the identification of solubility of salts, colours of the complex ions and tests of specific cations and anions. Pre- test marks of grade 13 students on IQA also showed a lower degree of achievement. Teachers' opinions gathered through questionnaire also confirmed that students have difficulty in answering practical based questions.

In order to overcome the identified problems and to facilitate learning – teaching process in IQA, an activity booklet was designed including several teaching tools such as practical tests, practical activity based questions, flow charts, concept maps and tables. This booklet was introduced to the chemistry teachers and the students of experimental groups of grade 13 and 12 of G.C.E. A/L science classes. The analysis of marks of post-test showed that the students in the experimental groups whom were taught only with activity booklet had comprehended the contents better and answered the practical based questions satisfactorily than the students of the control groups who learnt that particular sections using chalk and talk method or only by practical tests according to N.I.E. guide.

Thus, the activity booklet proved to have the anticipated impact of elevating the knowledge of students in dealing with practical based questions on IQA.