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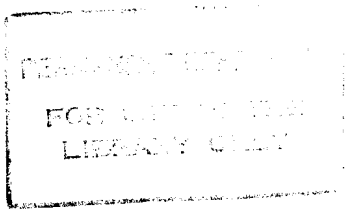

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NADARAJAH VIGNESWARAN

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AN EFFECTIVE METHOD FOR TEACHING ORGANIC SYNTHESIS FOR G.C.E.A/L STUDENTS

N.VIGNESWARAN
Postgraduate Institute of Science
University of Peradeniya
Peradeniya
Sri Lanka

Organic chemistry is a major section (85 out of 430 periods) in the G.C.E.A/L chemistry syllabus. In the past years, there were about 15 multiple choice organic questions in paper I and two structured organic questions in paper II. One of the structured organic question is usually based on organic synthesis. The analysis of the statistical report of the G.C.E.A/L examination published by National Evaluation Testing Services (NETS) (section 3.4) indicated that the students' performance in the organic chemistry question on organic synthesis was unsatisfactory. A teacher questionnaire and a student questionnaire were used to find the reasons for this poor performance. The analysis of the responses obtained from these questionnaires indicated that, even though the students like to learn organic chemistry and teachers like to teach organic chemistry, many students lack both knowledge and skill to answer the organic synthesis questions

In our study, the methodology of teaching organic chemistry to G.C.E.A/L students was changed so as to increase the students' participation during their learning process. Different set of lesson notes, where hydrocarbons divided into several sections and each section having lessons through activities such as matching, fill-in-the-blanks of missing reagents or products, puzzles, quizes etc was prepared to teach 20 periods in nomenclature and hydrocarbons by activity based method. In addition, three sets of activities one each on alkane, alkene and alkyne were also prepared. Two sets of students (one is called experimental group and the other one control group) were selected from the G.C.E.A/L 2006 batch of students at Koneswara Hindu College, Trincomalee. Their background knowledge was tested from interviews with their teachers and parents and their test marks

for three terms in grade 12. Both interviews and the marks obtained at three term tests in their grade 12 class indicated that the students in the control group were of better quality with respect to their academic interest, study habits, benefits from the parents and their background knowledge in mathematics, physics and chemistry compared with the students in the experimental group. The students from the control group were taught the nomenclature and hydrocarbons using the lesson notes prepared by the conventional method and the students from the experimental group were taught using the lesson notes and activities prepared by the activity based method. After each five lessons an assessment test was conducted for all the forty students. Altogether four assessment tests were conducted, and the overall average mark of the four assessment tests for the experimental group was 75 where as that for the control group was 60. The students from the experimental group performed well in all these four assessment tests even though the background (before starting these lessons) of the control group students were better than those of experimental group students. It also could be noticed that, when the activity based method was used, the anxiety of the students decreased and their desire to learn increased. After conducting all four assessment tests, the students from the control group were taught the hydrocarbons using the three sets of activities prepared for alkanes, alkenes and alkynes and improvements in their performance could be noticed.

Therefore it could be concluded that the activity based teaching methodology is an effective method for teaching organic synthesis for G.C.E.A/L students. It provided opportunities for active learning and participation of students during teaching process.