

EVOLUTION OF ORGANIC CHEMISTRY IN SRI LANKAN SCHOOLS WITH SPECIAL REFERENCE TO ADVANCED LEVEL SYLLABUS

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Introduction

Chemistry has gained a secure position in the curricula of schools, technical colleges and universities, both as an essential part of general education for life and as a separate branch of science in the recent years. The importance of the subject is now recognized by all educationists. A study of development of chemistry itself and its introduction into educational institutions reveals a steady advance to its present status. To achieve the above goals, though the study of Chemistry was introduced into the school curriculum in 1878, the emphasis on Organic Chemistry was made only after 1948. As such this is an effort to provide an overview of the Evolution of Organic Chemistry in Sri Lankan Schools with Special Reference to Advanced Level Syllabus by considering its history and development.

The main objective of this research is to determine the changes in Organic Chemistry content of the Advanced Level syllabus. Specific objectives are to preserve documents such as syllabi and examination papers that would otherwise be lost; to provide information to those engaged in the teaching of Organic Chemistry; to present suggestions for further improvement in the syllabi and methodology of this subject. This study will be useful for future planners of syllabi for the A/L

classes, especially from the point of view of the competitiveness of the A/L examinations.

Materials and Methods

This study deals with data that already exist. The following sources were used to gather information namely, documents such as syllabi of 1976, 1979, 1995 and 2009, books Durrant (1950), Wannigama (1973) and Browning and Joseph (1958), past papers from 1951 to 1960, 1965, 1966, 1968 and 1975 to 2008, Ceylon Administration Reports of 1878, 1880, 1923, 1927-1928, 1947, 1950, 1960-1961, 1965-1966, 66/67, 1967-1968, 1969-1970, sessional papers and theses.

A questionnaire was given out to educationalists to obtain further information and post informal interviews were held to clarify the ideas presented.

Syllabi, question papers and practical guides were analyzed using comparison charts to pinpoint the content changes in Organic Chemistry section of the Advanced Level syllabus. Information in the administration reports, the theses, and the sessional papers were examined to study the development of science education and chemistry education as well as examination system in Sri Lanka which were necessary to

prepare a suitable background to proceed with this study.

Results and Discussion

Inclusion of Organic Chemistry in the Advanced Level syllabus has been gradual. During the early period especially in 1950s and 1960s, greater emphasis was laid on Organic Chemistry. This was due to the fact that students aspiring to enter the Medical, Dental and Veterinary faculties had to face a special theory paper in Organic Chemistry. As this Organic Chemistry syllabus was too extensive, it was reduced in 1976 by introducing a skeletal syllabus. Reaction mechanisms appeared for the first time in this syllabus. Again in 1979 and 1995, it was revised to suit the needs of the country and another revision has been effected in 2009.

Format, content and the quality of the question paper was also changed in accordance with the above revisions. Questions on Organic Chemistry were included in the essay type papers from 1950 to 1970. When practicals were abolished in 1971, an MCQ paper was introduced. In addition to the essay type questions, structured essay type questions were included. Until 1978 questions on Organic Chemistry were included in both papers, but after 1978 Organic Chemistry was excluded from the essay type section.

MCQs of Organic Chemistry cover higher levels of cognitive domain as indicated by Bloom in his classification. The structured essay type questions were made more complicated.

The percentage of Organic Chemistry content in the examination papers from 1950 to 1958 was 28.57 %; in 1959 54.54 %; in 1965 and 1966 44.44 %; from 1968 to 1970 25 %; from 1971 to 1978 36.4 %. After 1978 to date, it is either 21.7 % or 20.0 %. Marks reserved for Organic Chemistry from 1971 to 1978 was 40.84 % for the students who expected to enter the Medical, Dental and Veterinary faculties. For Physical and Bio science students it was either 33.34 % or 25.84 % depending on the selection of questions. From 1979 up to now it stands at 21.7 %.

The volume of practicals that prevailed from 1950 to 1978 was reduced in 1979. Until 1979 practicals were carried out according to Browning and Joseph. After 1979 a list of practicals and guidelines were introduced. These were revised in 1995.

Information gathered from the responses to the questionnaire and the informal interviews were not sufficient for an in-depth analysis. However they provided some useful information for this study.

Conclusion

The syllabus has been modified over a period of time either by dropping several areas or adding specific sections. The content of the present syllabus though complete to a great extent is deficient in application of Organic Chemistry to life. It is evident that the question paper does not adequately assess knowledge acquired in Organic Chemistry considering the vast area covered in that section.

References

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