

THE UNIVERSITY OF COLOMBO

SRI LANKA

TITLE. "A STUDY OF THE EXTENT TO WHICH
THE METHODS, PROCEDURES AND PROCESSES
OF SCIENCE HAVE BEEN SUCCESSFUL IN
THE SENIOR SECONDARY SCHOOLS OF SRI
LANKA."

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ABSTRACT

The aim of this study is to assess the methods, processes and procedures of Science Education in the Secondary Schools of Sri Lanka. To study these aspects the writer used the Wisconsin Inventory of Science Processes, administered a test on investigation of scientific attitudes and interviewed teachers and students.

Science is here taken to mean not only knowledge, but also processes, procedures and methods. In short these are the methods adopted by the scientists. It is the usual practice in all science classes to impart knowledge, but it is accepted throughout the world that in every science lesson, the spirit of science will have to be inculcated in the students. However as what is taught in school is directly linked to the examination, teachers tend to teach what is expected of the examining authority. The Department of Examinations always tests the knowledge component only. Although every science curriculum stresses the process and products of science, teachers tend to neglect them as these are never tested by ^{the} Examination Department. This study attempts to find out to what extent the students have acquired the process, procedures and methods of science.

Lack of validated instruments to assess the process, procedures and methods of science, is a drawback in the Sri Lankan context. To overcome this the writer made use of two instruments designed and validated in the U.S.A. To find their



suitability in the local context, the writer translated them into Sinhala and administered them to 263 students in the G.C.E. Advanced Level Classes. To assess the suitability of each item, an item-analysis was undertaken and some items were rejected. Item-analysis showed that 80 items were suitable and 13 were rejected due to the different cultural background. The test on scientific attitude (TOSA) was suitably modified to suit Sri Lanka. Out of the 40 items in the original instrument only 25 were chosen. These were administered to the same students. To understand the present situation better, the students and their teachers were interviewed.

Results indicated that the students pay attention to the knowledge aspect of science. Their knowledge on the processes, procedures and methods is dismally poor. In the Sri Lankan context, process, procedures and methods are as important as, or even more important than knowledge, because knowledge is forgotten too soon, whereas process, procedures and methods are utilised every day, by every individual throughout his life.

This study therefore stresses the need to teach process, procedures and methods in every science curriculum in Sri Lanka.