

NEED FOR AN ORGANIZED REMEDIAL TEACHING PROGRAMME IN MATHEMATICS FOR PRE-ADVANCED LEVEL SCIENCE CLASSES

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Pupils are selected to the G.C.E.-Advanced Level (AL) science classes based on the performance at the G.C.E.-Ordinary Level (OL) examination. Though most of the pupils (99%) enter the AL science streams with A grades or B grades (distinction or credit passes) for mathematics and science at the OL examination, a substantial number of pupils find it extremely difficult to follow chemistry, physics and combined mathematics subjects at the first year of their AL programme. During the last two decades we have noticed as teachers that the required background knowledge in basic mathematics of many AL science pupils (more than 90 %) at the pre-Advanced Level stage (before starting their AL studies in subject areas) is far from being adequate.

The objectives of this study were to identify the weak areas in basic mathematics of pre-AL science pupils and to propose remedial measures that can be adopted at the secondary level science education to minimize the shortcomings of the teaching and learning process. The sample selected for this study is approximately 400 pupils from 1-AB schools of Kegalle district with AL science classes.

Via pre-tests and pre-interview schedules, we have identified twelve key-areas of basic mathematics, which are essential pre-requisites for AL science streams. They are ranging from basic operations in the number line to the geometry of two variable linear systems. Our organized remedial teaching (ORT) programme was experimented for a period of three months via teaching and monitoring the specially prepared lesson units in the twelve key-areas to sub-classes of the sample which were selected according to the weaknesses in knowledge and skills.

The results of the post-tests show that the sample mean mark has increased from 24% to 59% and the post-interview schedules have indicated that the ORT programme has bridged the knowledge gap in basic mathematics of pre-AL science pupils to a certain extent. Paired t-test confirms that improvement due to the ORT programme is significant with confidence level 99 %. Therefore an ORT programme in mathematics for pre-AL science classes is an absolute necessity but the adequacy with respect to the duration of the programme have to be studied as a next step of this project. Moreover, the OL mathematics curriculum should be revised so that there will be more coordination between areas of science and mathematics, rather than mathematics being a mere subject for examination purposes. This can make the AL science education more fruitful.