AN INVESTIGATION OF STUDENTS' ACHIEVEMENT LEVELS IN MATHEMATICS AT THE G.C.E. (ORDINARY LEVEL) EXAMINATION

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ABSTRACT

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In Sri Lanka, the national level examination that admits the highest number of candidates is the G.C.E.-Ordinary Level (OL) examination. The students who intend to continue higher studies at the G. C.E.- Advanced Level (AL) select their subject streams according to the achievement level of this examination. Those who deviate from the main academic stream to pursue vocational and career guidance courses also decide their relevant fields depending on their OL subject grades. Moreover, mathematics is a compulsory subject at the OL examination and to pass the OL examination it is necessary to get a minimum of S- grade for mathematics. However, the passing percentage of mathematics at the OL examination is very low (less than 47%) compared to other subjects. This poor achievement level in the subject mathematics at the OL examination is one of the biggest problems in the national education system and therefore it needs to be investigated.

This study is to investigate students' achievement levels in mathematics at the OL examination and their selection patterns with respect to subject contents Algebra, Geometry, Trigonometry etc., of the questions. This study also aimed at proposing new strategies, which can improve the students' achievement levels in mathematics at the OL examination.

Three schools in Colombo district (two-1AB type schools and one-1C type school) and three schools in Ratnapura district (one-1AB type school and two-1C type schools) were chosen for the study. Methods used for the collection of data were pre-tests, post-tests, pre-interview schedules, OL teachers' opinion and questionnaires. Taken as a whole, by analyzing OL mathematics results question-wise from 1998 to 2002, noted that more than 70% of the students have selected algebra sections but they had low (less than 42%) achievement levels in those sections. Thus a Preferential- Learning Teaching (PLT) programme was designed and focused on the section of algebra for grade 11 classes.

The results of the paired t-test shows (at the significant level 0.05), a PLT programme is essential as a remedial measure. The mean of the marks scored by the students at the pre-test was 30, and 62% has fallen into the 0-34 marks range, but at the post-test, mean mark has increased to 63 and only 10% has fallen in to the 0-34 marks range. Thus our PLT experimental programme is a success to a certain extent.

Since algebra content is the dominant part (approximately 2/3 of the content) of the OL syllabus and the OL question papers and also the students' selection patterns indicated that algebra sections have the highest preference level at the OL examination, we can infer that there can be a significant difference in the achievement levels in OL mathematics if we adopt PLT programmes for Algebra at the national level. Thus Algebra is the key area for PLT programmes and by conducting PLT programmes on a district basis, OL achievement levels in mathematics could be improved significantly.