

**PROBLEMS ENCOUNTERED IN TEACHING PHYSICS CONCEPTS
AT G.C.E (ORDINARY LEVEL) BY SCIENCE TEACHERS:
A CASE STUDY CONDUCTED IN THE JAFFNA EDUCATION ZONE**

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Science Education has seen many reforms in past years. The purpose of these reforms is to frequently change and develop so as to meet needs of students. One of these needs is to learn how to do Science, not just to memorize Science facts and procedures. Therefore, teachers of Science must have well knowledge in Science.

It is the knowledge of teachers that determines to a large extent how they respond to Educational innovation and the innovators take this knowledge into account when implementing Educational changes. This study aimed at identifying the structure of Science, teachers' knowledge at the senior secondary level. A sample of eighty-two Science teachers in schools representing Jaffna Zone was randomly selected. One domain of teachers' knowledge about subject matter was investigated, since they still had little experience in teaching new Science subject components in Physics, Biology and Chemistry. The direct interviews and the questionnaire in pre-test and post-test modes were used. The questionnaire was aimed at obtaining the responses in relation to knowledge, illuminating the concepts of Physics. The data were quantitatively analyzed and interpreted with qualitative inputs. From the analysis of teaches' prior knowledge was assessed with a pre-test. The statistical analysis of the improvement means from pre-test to post-test scores showed no significant differences in the controlled group and significant differences in the experimental group.

The study revealed as per the responded sample of teachers (82) that the present state (level) of knowledge was not adequate (that is, seventy-five (75) teachers scored below forty (40) out of hundred). They were not successful in explaining the correct factual concept of Physics, as per the answers given by them in the questionnaire. It was also revealed that the knowledge of teacher sample to respond basic concepts were low (that is, seventy-five (75) teachers scored below forty (40) out of hundred). As a result of this study, it was further observed through informal discussions with the stake holders (that is, students, teachers and Educational authorities) that, due to the weakness in subject knowledge of the school Science teachers in Physics, the students have not been able to grasp the correct concept, causing poor performance at the examinations. This project was identified by the researcher that most Science teachers need to have a better understanding of concepts of Physics. The teachers should be provided with opportunities to update their knowledge through periodical seminars and workshops to achieve the goal of Science Education.