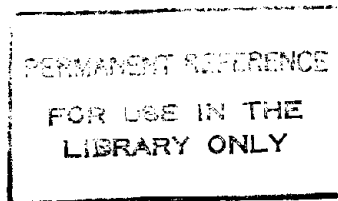


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IMPROVING STUDENT UNDERSTANDING OF INTRODUCTORY LEVEL  
PHYSICS-MECHANICS THROUGH COMPUTER-BASED  
INTERACTIVE METHODS



A PROJECT REPORT PRESENTED BY

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**IMPROVING STUDENT UNDERSTANDING OF INTRODUCTORY LEVEL  
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INTERACTIVE METHODS**

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During the recent past, the curriculum developers in Sri Lanka have carried out several educational reforms to upgrade the students' performance. However, the students' performance at the national level examinations is still not at a satisfactory level. This can very likely be associated with the traditional passive learning mode of teaching adopted by our teachers at present.

The aim of this project is to introduce an alternative teaching and learning approach within a modern environment provided by the computer-based tools and software in order to gain a clear understanding of physical concepts and phenomena.

In this study, a total of 58 students who have started their G.C.E. Advanced Level classes were involved. To compare and assess student understanding of physical phenomena two instructional sessions; one based on passive traditional lectures and the other based on computer-based interactive laboratory experiments, were used.

By administering a pre-test consisting of 20 multiple choice questions (MCQ) and 10 short answer questions that related to the Mechanics section of G.C.E. (A/L) Physics syllabus as a selection test, two comparable groups of students were selected. Both teaching sessions were conducted separately to cover the same topics during equal periods of time.

At the end of the instruction sessions, both groups of students were given a post-test consisting of 30 multiple choice questions to assess the gain in conceptual understanding. Closer analysis of these carefully selected post-test questions gave a detailed picture on how students have learnt and what they have learnt.

The analysis of results shows a significant improvement in learning and understanding of physical concepts and phenomena, by students in the experimental group subjected to computer-based interactive instructions compared to the students in the controlled group subjected to traditional instructions.