

EFFECTIVENESS OF LABORATORY WORKSHOPS TO IMPROVE STUDENTS' SCIENCE PRACTICAL SKILLS: A CASE STUDY IN KATUGASTOTA EDUCATION ZONE

H.M.D.R. Senevirathna^{1*} and A.D.L.C. Perera^{1,2} and W.D. Chandrasena^{1,3}

¹*Postgraduate Institute of Science, University of Peradeniya, Peradeniya, Sri Lanka*

²*Department of Chemistry, Faculty of Science, University of Peradeniya, Peradeniya, Sri Lanka*

³*Science Education Unit, Faculty of Science, University of Peradeniya, Peradeniya, Sri Lanka*
**hmdranjani@gmail.com*

In Sri Lanka revision of the G.C.E. (O/L) science syllabus has been carried-out in every eight years, to improve, develop and update. In the most recent revision conducted in 2015, a competency based curriculum has been introduced. Laboratory work always has a key role in science teaching. Thus, each and every science lesson should be based on laboratory work to develop authentication. However, most of the teachers tend to teach science using traditional teaching methods without concentrating on the practical aspects of the subject. Even, if they utilize some laboratory classes to teach science, they do not necessarily consider the basic practical skills that students should possess. This study was aimed at investigating the effect of laboratory workshops on enhancing students' laboratory skills. Mixed-methods approach consisting both qualitative and quantitative aspects were used in the study. The sample consists of Grade 11 students by selecting 15 students from each school representing all three types of schools, namely; 1-AB schools, 1-C schools and Type 2 schools in Katugastota Education Zone. The data obtained from the instruments (observation schedules and written test) in the pre-test and post-test were analyzed by paired sample t-test using SPSS. The results revealed that, there is a significant difference in the mean values of pre-test (Practical test 29.82; Written test 17.27) and post-test (Practical test 56.4; Written test 43.13). Further, students obtained hands-on experience in conducting experiments and improved their higher order skills such as problem-solving and critical thinking. Therefore, the classroom learning practices are to be reevaluated in enhancing students' meaningful learning in G.C.E. (O/L) Science.

Keywords: Competency, Laboratory workshops, Practical skills