

**USE OF ETHNOMATHEMATICS IN SECONDARY SCHOOL CURRICULUM:
A CASE STUDY IN KANDY EDUCATION ZONE**

D.K. Wijethunga¹ and W.D. Chandrasena^{2*}

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

²Science Education Unit, Faculty of Science, University of Peradeniya, Peradeniya, Sri Lanka

*wdchand@pdn.ac.lk

Mathematics relates to every aspect of our life. It is a skill which is essential to understanding the situation and decision making in day-to-day life. In the Sri Lankan educational system, Eurocentric mode of delivering mathematics as a subject has been introduced during the colonial period. Mathematics was one of the compulsory subjects at the G.C.E. (O/L) examination and the most basic qualification considered for every aspect. The bond between culture and Mathematics causes school Mathematics always a crucial task for many Sri Lankans. During this study, testing of less mathematics concepts in critical and analytical thinking was identified as one of the inadequacies in the existing curriculum. As a consequence, without better understanding of concepts while developing the skills, students obtain better results annually. Ethnomathematics is one of the resenting processes applied world-over in the formative period to obtain a satisfactory progress in applications of Mathematics during lifelong learning. Thus, the main focus of this study is to introduce ethnomathematics in the classroom setting of Grades 6 and 7. Three schools in the Kandy Educational Zone with 510 students were selected through convenience sampling. Five lessons for Grade 6 and four lessons for Grade 7 were prepared for the lessons given in the curriculum. A pre-test was administered to separate the student sample into two groups as experimental and control. Experimental group was instructed using ethnomathematics while using traditional method of teaching for the control group. Before the intervention students' motivation was also tested. A post-test was administered for both the groups to test their performance in relevant topics. Open-ended questionnaires were also administered to collect information of the current problems. Structured interviews were administered to teachers, school Principals and zonal Directors. Term test marks along with relevant topic test marks were analysed. Independent sample *t*-test on the students performance revealed that there was a significant ($t = 556, p < 0.05$) improvement in the experimental group compared to the control group. The intrinsic motivation of the students has also been improved after the intervention. Thematic analysis of the structured interviews revealed that many teachers do not feel that the secondary school is not a crucial level for learning mathematics. Teachers were also of the view that adapting to new teaching methods is challenging. Thus, the findings of this study are encouraging enough to conduct further research in the direction of teaching ethnomathematics at the secondary school level to enhance students' meaningful leaning while increasing their intrinsic motivation to meet the challenges faced in contemporary life and careers.

Keywords: Ethnomathematics, G.C.E. (O/L), Motivation, Performance