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**Adults' perception of horizontality: A Sri Lankan experience**

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Many studies highlighted that students' performance in Geometry at the GCE (OL) Mathematics is very poor in Sri Lanka. The concept of horizontality is very important to understand topics in geometry. Horizontality can be defined as the quality of being parallel to the horizon. The idea of horizontality and verticality, for example, is the ability to predict the inclination of the surface of a liquid in a jar about to be tilted in specific ways. The idea of horizontality and verticality is not acquired by children before nine to ten years of age; the perception of horizontality provides young children with a 'rough but an adequate idea of the relationship between the horizontal and their own line of vision and bodily positions'. The objective of the study was to identify Sri Lankan adults' perception of horizontality. The hypothesis was 'There is a significant difference in adults' perceptions of conservation of horizontality'. The method of study was quantitative. An experimental research design was used in identifying the conception of horizontality in adults. The sample was 90 second year students of the Diploma Programme at the Open University of Sri Lanka. Instruments used in the study were a glass bottle half filled with coloured water and an empty bottle of the brand kind. The bottle half filled with coloured water was placed on the table in a vertical position and the empty bottle and a picture showing a half filled bottle tilted at 45° from the surface of the table. The students were asked to draw a line on the picture representing the surface of the water in the half-filled bottle which was tilted. 26 (28.9%) students drew the line horizontally and 64 (71.1%) of them did not draw the line horizontally. Chi-Squared test showed that  $\chi^2_{cal} > \chi^2_{critical}$ . Therefore the null hypothesis is rejected. There is a significant difference in adults' perceptions of conservation of horizontality. Pre-school curricula implemented in many Sri Lankan pre-schools follow Piagetian concepts and methods to provide experience to students. Mathematics in Key-stage I is influenced by Piagetian concepts. Piaget noted that children gradually discover that the surface of water at rest in a container remains horizontal despite the orientation of the container. Findings of this study show that, there is a significant difference in adults' perceptions of conservation of horizontality and 71% of the adults' do not have the ability to represent horizontality. The results indicate that adults find it difficult to perceive horizontality. When compared with findings of Buton (1979) and Pulos (1991) the percentage of Sri Lankan adults who did not perform well in horizontality tasks are higher. These findings indicate the need of effective learning of horizontality at school.

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