

# **International Conference on Mathematics and Mathematics Education (ICMME) 2021**

## **Workshop for School Teachers**

**Resource Centres:** Postgraduate Institute of Science (PGIS), University of Peradeniya and Ministry of Education, Sri Lanka

**Venue:** PGIS

**Number of Participants:** 50 (In-person) and 50 (Online)

**Date:** 04<sup>th</sup> June 2021

**Duration:** 8:00 a.m. – 3:00 p.m.

**Medium of Instruction:** Sinhala/English

## **Topics covered**

### **I. Statistical Data Analysis for School Education (8:00 a.m. – 11:00 a.m.)**

**Instructor:** Dr. Sachith Abeysundara

#### **Outline**

An Overview of Educational Research

Basic Research, Applied Research, Action Research

Quantitative, Qualitative

Experimental, Non-Experimental

Basic Concepts

Variables

Measurement Scales

Methods of Sampling

Descriptive and Inferential

Describing Distributions of Data

Organizing data

Summarizing score as Tables

Using graphs/charts to summarize data

Summarizing data: Measures of Center and Measures of Variability

What would be appropriate measure to describe the center of data

What would be appropriate measure to describe the deviation of data

Standardized Test scores

Comparing scores obtained from two different subjects

Measuring Relationships

Scatter plots and Correlation

Comparing groups

## II. Use of *GeoGebra* Software for School Mathematics (12:00 p.m. – 3:00 p.m.)

**Instructor:** Prof. Wasantha Daundasekera

### Outline

Installation Instruction of *GeoGebra* Classic 5.0

Introduction to *GeoGebra* Interface

Graphics View

- Geometry
- Coordinate Geometry
- Vectors
- Polynomial functions
- Piecewise functions
- Rational functions
- Trigonometric functions
- Exponential functions
- Logarithmic functions

Algebra View

- Quadratic equations
- Partial fractions
- Series
- Binomial expansion
- Complex numbers

Computer Algebra System (CAS) View

- Algebra
- Calculus
- Symbolic computations

Spreadsheet View

- Pictures of data
- Descriptive statistics
- Probability calculations
- Matrix operations

3D Graphics View

- Plane
- Sphere
- Cylinder
- Cone
- Pyramid
- Tetrahedron
- Cube
- Surface rotation

Note: Some topics in Applied Mathematics