# **Sustainable Development Goal 4: Quality Education - Problem Definition Document**

## **1. Problem Definition**

### **1.1 Background**

Sustainable Development Goal 4 (SDG 4) aims to ensure inclusive and equitable quality education and promote lifelong learning opportunities for all. Despite various efforts, many educational systems still face challenges in tracking student performance, identifying areas where students need additional support, and ensuring that educational resources are allocated effectively.

### **1.2 Problem Statement**

Many educational institutions struggle to effectively monitor and analyze student performance across different assessments, track attendance, and identify students who require additional support. This lack of comprehensive tracking and analysis leads to missed opportunities for timely interventions and support, which can impact students' overall educational outcomes and hinder their ability to succeed.

### **1.3 Objectives**

1. **Enhance Performance Tracking**: Develop a system to accurately track and analyze student performance across multiple assessments.
2. **Monitor Attendance**: Implement a method to systematically record and monitor student attendance.
3. **Identify Support Needs**: Create a process for identifying and tracking students who require additional support.
4. **Improve Resource Allocation**: Use data-driven insights to better allocate educational resources and interventions.

## **2. Proposed Data-Driven Solution**

### **2.1 Overview**

To address the problem, we propose designing and implementing a relational database system to track student performance, attendance, and support needs. The system will allow educators and administrators to analyze data effectively, identify trends, and make informed decisions to improve student outcomes.

### **2.2 Database Design**

#### **2.2.1 Entities**

* **Students**: Stores basic information about students.
* **Assessments**: Records details about various assessments or exams.
* **StudentScores**: Links students to assessments and stores their scores.
* **Attendance**: Tracks attendance records for each student.
* **SupportNeeds**: Documents additional support needs identified for students.

#### **2.2.2 Relationships**

* **Students** to **StudentScores**: One-to-Many
* **Assessments** to **StudentScores**: One-to-Many
* **Students** to **Attendance**: One-to-Many
* **Students** to **SupportNeeds**: One-to-Many