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A Case Study of the Implementation of a Science Project with the Application of the Engineering Design Process (EDP)

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Abstract

Purpose – This case study compares the actual and intended learning processes during the implementation of a science project through integrated STEM education as a learning approach. It also determines the implementation process's strengths and limitations.

Method – The data collection method was mostly through classroom observation and document examination.

Findings – This investigation established that the actual process did not always correspond to the desired procedure exactly. After the second round of Covid-19 Movement Control Orders (MCO), the school was forced to close and revert to online learning. Many pupils require assistance via internet communication. As a result, the actual implementation procedure deviated significantly from the expected process. Students initially expressed excitement about the design challenge and shared their innovative ideas. However, only 57.8 percent of pupils persisted and completed the work, while the remainder appeared to lack the motivation to continue. Inadequate resources, equipment, and materials, as well as the classroom environment, may contribute to students' motivation.

Significance – This evaluation assists in identifying teachers' and school administrators' strengths and problems for improvement. A few recommendations were made to enhance the future implementation of a similar science project.

Keywords: Engineering Design Process (EDP), Evaluation, Science project, STEM education.