

## ABSTRACT

### **Using Action Research to Develop a Model for Improving Implementation of Science and Technology Curricula in St. Lucian Primary Schools**

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This multiple case study sought to enhance implementation by addressing the needs of teachers with reference to: teacher knowledge, teacher attitude and interest in science and technology, teacher adequacy to teach science and technology, resource adequacy, professional support, school ethos and time.

Four cases, the principal of each case, 25 teachers of Grades K to 4, and 168 students of Grades K to 4 were purposely selected. The Science Curriculum Implementation Questionnaire (SCIQ) was administered to the principals and the teachers. The principals, teachers and students participated in interviews. A random sample of 108 parents of students of Grades K to 4 from the four cases were administered a questionnaire. Twenty three science and technology lessons were also observed. Data obtained were used to develop an intervention programme to address the needs identified. The instruments were re-administered after implementation of the intervention programme. The intervention programme took the form of professional development activities which sought to develop in teachers the culture of collaborative and reflective practice.

Data from the SCIQ were statistically analyzed using paired samples t-test for determining the statistical significance between pre- and post- intervention data. Data from the interviews were qualitatively analyzed. The teachers also kept reflective journals about the effect of the intervention on their knowledge, attitudes and practices in teaching science and technology.

The intervention programme improved implementation of the science and technology curriculum in three of the four cases and showed statistically significant increases in: teacher knowledge, teacher attitude and interest in science and technology, teacher adequacy to teach science and technology, resource adequacy, professional support, and school ethos. The findings emphasize the need for ongoing professional support for teachers (the implementors). Further cycles of action research are necessary to maintain the impetus to improve the status of science and technology education.

**Key Words:** Science education; Technology education; Curriculum; Implementation Model; Action Research