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INTRODUCING THE "SCIENTIFIC METHOD" THROUGH G.C.E. (A/L) ADVANCED LEVEL STUDENT PROJECTS

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The present study is an effort to introduce the "Scientific Method" to students through G.C.E. advanced level projects. A practical and current problem, namely, "monkey menace" was identified for this purpose. Seven monkeys, who had become a threat to humans at different locations in and around Kandy, were captured, castrated/oavriohysterectomised and were reared in individual cages. Subsequently, they were introduced into a specially made cage in which they were made into one artificial troop later to be reintroduced into the wild.

Thirty seven G.C.E. (A/L) students (in Arts, Science and Commerce streams) from 12 schools in and around Kandy were selected. As the "pre-test" responses were recorded using a questionnaire (with 12 questions) on the awareness of projects, the "scientific method" and integration of knowledge in different study disciplines. The problem of the "monkey menace" and "solutions" were discussed in light of the "scientific method" with active participation and contribution of the students. Subsequently, students recorded observations on the behaviour of monkeys after surgical operations. To the previous questionnaire was added with 5 additional open-ended questions were added and given as the "post-test". The responses were recorded. The pre- and post-test for each question were compared using the Chi-square test (at 5% significance level).

Nine of the students participated in the study were from the Science stream, 17 from the Commerce stream and 11 from the Arts stream. The proportion of students who learnt "scientific method", significantly increased from 8 % to 92 %, during the study. None of the students knew the number of steps involved in the "scientific method" at the start of the study while at the end, a significant proportion (92 %) knew the answer. The proportion of students (89 %) who did not know the exact steps in "scientific method" at the start, reduced significantly at the end (30 %). At the termination of the project, a significant proportion of students (81 %) knew how to identify the steps in the "scientific method" with respect to the project given. In addition, 78 % of them knew that such knowledge had to be integrated in suggesting the above solution. Furthermore, 70% of the respondents could satisfactorily state the disciplines that had been integrated.

It is important to note that the participating students dealt with a current and real life problem in which the solution required an integrated approach from several disciplines. It can be stated that the "scientific method" can be understood by students and, therefore, its inclusion into the G.C.E. A/L curricula may help students to address a real world problem rationally, which would improve their scientific thinking.