

## Impact of use of FETL Model in Mathematics Lessons on Student Achievement and Attitudes in Secondary Schools and Postsecondary Institutions in Guyana

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### Abstract

The purpose of this quasi-experiment research design was to determine the effect of the FETL Model on student achievement and attitudes. Two Guyanese postsecondary institutions ( $n = 28$  and  $n = 31$ ) and one secondary school with two experimental groups ( $n = 21$  and  $n = 26$ ) and two control groups ( $n = 28$  and  $n = 20$ ) participated. Postsecondary students only completed the survey. For the experimental groups, lessons were designed using the FETL Model which included simulation and gamification applications including Khahoot! and PhET Simulation, whereas lessons for the control groups were taught using traditional teaching methods. One-way ANCOVA revealed that the mathematics progress scores of the students who were instructed using the FETL Model were significantly higher than the test results of the control groups. Survey results indicated that students in secondary and postsecondary institutions had positive attitudes towards the FETL Model use. Implications for policymakers, administrators, teachers, and curriculum designers are discussed.

**Keywords:** lesson planning best practices, FETL Model, teaching and learning ecosystem, innovative teaching methods