

# Enhancing students' achievement in biology using inquiry-based learning in Rwanda

## Abstract:

Students in secondary schools in Rwanda manifest difficulties in learning science subjects including biology. Studies revealed that inadequate teaching methods dominated by teacher-centered traditional or conventional educational strategies are some of the factors that cause difficulties in learning, which in turn leads to poor achievements in biology. This study investigated the effect of inquiry-based learning (IBL) using 5Es instructional model (Engage, Explore, Explain, Elaborate and Evaluate) on secondary school students' achievement in biology. There were 231 secondary school students from six schools in Rwanda constituted the sample. A quasi-experimental quantitative approach consisting of pre- and post-tests was used for data collection. Descriptive statistics were used for data analysis. Results indicated that the mean of post test score of experimental group was higher than the mean of counterparts in control group. Further, t-test and ANCOVA were used for inferential statistics. Findings showed once again significant differences between experimental groups taught with IBL and control group taught with conventional teaching methods. There was no significant effect on gender while a significant difference based on school location was identified. The study recommends educational stakeholders to use the IBL designed by 5Es instructional model at school level to solve problems related to poor performance in biology.

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