

*Full Length Research Paper*

## **Cognitive effects of curriculum model and school type on science learning: Implication for production of quality young scientists**

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The study focused on determining the influence of curriculum models and school type variables on students' cognitive learning outcome in science. Opinions vary as to variables that affect science learning outcomes among boys and girls. Research reports have also contradicted one another on the disparity that exists between the sexes in achievements in science and in participation in science occupations. This study is an attempt in establishing empirically the effect of these variables on science learning outcome as well as proffer possible remedies to poor science achievement among learners. Four null hypotheses were tested in the study. Two hundred and ten (210) SS2 science students in nine intact classes from three secondary schools (one from each senatorial zone) in Delta state, Nigeria were taught six concepts in biology using three curriculum models (Traditional Expository Approach (TEA), Hypothetico-Predictive Learning Cycle (HPLC) and Descriptive Learning cycle (DLC)) for ten weeks. The three sampled schools consist of one All-boy, one All-girl and one co-educational school respectively. A 3x3x2 factorial design was employed while data was collected using three instruments (Test of scientific reasoning skill, test of attitude towards science and test of achievement in science). The resulting data was subjected to Analysis of Variance ( 2-way ANOVA) with repeated measures as well as graphical display. Result showed that while outcome varied along test types, with attitude most favoured, there was no interaction with either school type or gender. However, HPLC proved more effective in improving students' learning outcome across school types and gender. It was concluded that while all school types had the same effect on learning outcome of science students, there is need to employ adequate curriculum models that afford learners opportunity to learn science the way scientist do as well as provide adequate and conducive physical, social and psychological science learning environments for all school types and for both sexes.

Key words: Teaching science, learning cycle model, instructional methods, learning outcome, curriculum model, School type.

### **INTRODUCTION**

One of the outstanding natural endowment of Nigeria as harnessed has the potential of producing high caliber a nation is her human population. This great asset if well human capital necessary for lifting the country into

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