

EFFECTS OF TEST TYPES ON JUNIOR SECONDARY STUDENT COGNITIVE ACHIEVEMENT IN ALGEBRA

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ABSTRACT

The research work explored the effects of test types on public junior secondary student cognitive achievement in algebra in Ahoada-East Local Government Area (LGA) of Rivers State using the quasi-experimental research design of the pretest-posttest type. The multiple-choice test was used as the control test type while alternative-response test, matching test and the essay test types were used as the treatment tests. A total of 133 randomly selected JSC3 students from four classes in a school used for the study. The Algebra Achievement Test (AAT) was an instrument developed by the researchers for data collection. Kuder Richardson-21 (KR21) formula was used to establish the reliability of the AAT and the reliability coefficients of 0.82 and 0.78 were obtained for multiple-choice and alternative response test types respectively whereas test-retest method was used to obtain the reliability indices of 0.70 and 0.73 for the matching and essay test types respectively. Data were collected through the direct delivery approach. Descriptive statistics and independent-sample t-test were used for data analyses. Findings of the study revealed a significant difference between the cognitive achievements mean scores of students in algebra evaluated with multiple-choice test type and supply, alternative-response and matching types in favour of the multiple-choice test type. However, there was no significant variation between the cognitive achievement mean scores of students evaluated with the essay and those assessed with multiple-choice test types in algebra. Students evaluated with the multiple-choice test and the essay test type achieved significantly better when compared with their achievement, alternative-response and matching test types. Therefore, teachers and examination bodies should prefer the multiple-choice and essay test types, alternative-response and matching test types in evaluating students' achievement in Mathematics.

Keywords: Effects, test types, student, cognitive, achievement, algebra.