Effects of Guided Discovery and Activity-based Instructional Strategies on Senior Secondary School Students' Academic Achievement in Physical Chemistry in Lagos West Senatorial District, Lagos State

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Certification

This is to certify that this research work titled "Effect of Instructional Strategies on Senior Secondary Students' Academic Achievement in Physical Chemistry in Lagos West Senatorial District, Lagos State" was carried out by Grace Olubukola OLANREWAJU with matriculation number LCU/PG/002728 in the Department of Science Education, Faculty of Education, Lead City University Ibadan, Oyo State, Nigeria for the award of Master of Science Education Degree (MSc (Ed)) in Chemistry Education, under my supervision and that this has not been previously submitted to any institution for the award of degree or certificate.

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Supervisor

Date

Prof. P. O. Yara
Head of Department

Date

Dedication

This work is dedicated to the Almighty God, the Alpha and the Omega who gave me the opportunity to complete the study.

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Abstract

The research investigated the effects of Guided Discovery and Activity-based instructional strategies on students' academic achievement in Physical Chemistry in Senior Secondary Schools in Lagos West Senatorial District of Lagos State. The moderating effect of gender was also examined. Review has shown that learner-centered instructional strategies are necessary for the teaching of some concepts in science. Scarcity of such studies on students' achievement in Physical Chemistry using guided discovery instructional strategy and activity-based instructional strategy has informed this present study. The study adopted the pretest-posttest, control group, quasi-experimental research design. The instruments used for data collection was Physical Chemistry Achievement Test (PCAT) (KR20=0.81), teachers instructional guide on guided discovery strategy, teachers instructional guide on activity-based strategy, teachers instructional on conventional strategy and evaluation sheet for assessing teachers performance on the use of instructional strategies. The population of this study was 15376 of senior secondary two Chemistry students in study area. A sample of 129 students comprising 69 male and 60 female drawn from three schools within three Local Government Areas (LGA) in the district selected using multi-stage sampling procedures. Three null hypotheses guided the study. The hypotheses were tested at $p \leq 0.05$ level of significance using Analysis of covariance. There was a significant main effect of the independent variables (guided discovery and activity-based strategies) on the dependent variable. ($F = 41.139$, $p < 0.05$). The study further revealed that gender is not significant ($F_{(1,122)} = 0.364$, $p > 0.05$). Based on these findings, it was recommended that teachers should be discouraged from using teacher-centered instructional strategy in teaching Physical Chemistry, instead, learner-centered instructional strategies such as guided discovery and activity-based should be used.

Keywords: Academic Achievement, Guided discovery, Activity-based, Physical Chemistry, Senior Secondary School Students

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List of Acronyms

Abbreviation	Meaning
CAT	Chemistry Achievement Test
TIGGDS	Teachers Instructional Guide on Guided Discovery Strategy
TIGABS	Teachers Instructional Guide on Activity-based Strategy
TIGCS	Teachers Instructional Guide on Conventional Strategy