

A Psychometric Analysis of Two Major Examinations in Nigeria: Standard Error of Measurement

A. D. E. Obinne

*Department of Educational Foundations and General Studies,
University of Agriculture, Makurdi, Nigeria*

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ABSTRACT This study deals with the psychometric analysis of the two major examinations conducted in Nigeria by NECO and WAEC. The objective was to compare the standard error of measurement of Biology examinations conducted from 2000 – 2002 using the one-parameter model of Item Response Theory (IRT). Standard error of measurement (SEM) is commonly used to produce confidence interval and it is an estimate of how much error there is in a test. Instrumentation research design was used for this study. Benue State, Nigeria was the study area. The population for the study comprised all year three (SSIII) senior secondary school students who enrolled for May/June/July 2006 Biology senior secondary school certificate examination of NECO and WAEC in the three education zones of Benue State. The sample for the study was one thousand eight hundred (1800) students. Multi-stage stratified sampling technique was used to get this sample. NECO and WAEC 2000 – 2002 objective Biology questions were the instruments for the study. The maximum likelihood estimation techniques of the BILOG MG Computer Programme and the SPSS were used for data analysis. The results showed significant differences in the SEM of Biology examinations conducted by NECO and WAEC in 2000, 2001 and 2002. This implied that Biology examinations conducted by NECO had smaller SEM (high reliability) than those of WAEC. It has recommended that IRT analysis should be employed by Nigerian Examination bodies.