27 August, 2023

Kyoko Taniguchi[1], Haruhiko Mitsunaga[2], Koji Watanabe[3]
[1]Hiroshima University, [2]Nagoya University, [3]Miyazami International College

Test Development for Continuous International Curriculum Achievement Measurement:
A Case of Three Countries in Sub-Saharan Africa

Abstract

The purpose of this study was to develop English language arts and mathematics tests that can be used to measure curriculum achievement on a continuous and comparable basis in three countries in sub-Saharan Africa, namely Malawi, Ghana, and Uganda, where academic achievement is an issue. Two test versions of each were created, and simultaneous estimation was used to equate the examinees' achievement measures. A two-parameter logistic model was assumed, and a multi-population IRT model was used, which assumes separate ability value distributions over the population for each grade level in each of the three countries. The main features of this study are that the test was developed to measure "international curriculum achievement" and that the same test was administered to multiple grades to show "differences in academic achievement across grades.

Keywords: test development, item response theory, multiple population IRT model, equating