EXAMINING INTERCHANGEABILITY OF THREE MATHEMATICS TESTS IN THE COLLEGE ENTRANCE EXAMINATIONS IN CHINA

Chunlian Jiang
University of Macau, China

Students from countries with high-stakes examinations often perform better in international comparisons (e.g., the Trends in International Mathematics and Science Study (TIMSS) and Programme for International Student Assessment (PISA) (Woessmann, 2001). The National College Entrance Examination, also known as *Gaokao*, is the most competitive examination in China, and students' scores obtained in *Gaokao* were used as the only criterion to screen applicants for university study. Chinese students' scores in Gaokao are also accepted by many universities in the world. The one-syllabus-multiple-tests practice has been implemented since 1985. In 2014, more than 20 sets of mathematics tests of NCEE were adopted in China, but questions were immediately raised about the validity and interchangeability of the scores of these tests without empirical studies. A few provinces abandoned their own tests to avoid disputes and adopted the national test again in 2015. In 2018, only 7 tests were used in China for college admission. The decision to adopt a local test or the national one was made with little research that examines the reliability, validity, interchangeability, and even basic psychometric properties of these test scores (Jiang, Kim, Wang, & Wang, 2019). The current study aims to fill this gap by examining the similarities and differences of three mathematics tests (i.e., the National, Hunan, and Jiangsu tests) administered in 2014. The study focused on the subject of mathematics because mathematics is one of the three core subjects that all students have to take in k-12 schools. Data were collected from 1181 Grade 11 high school students in the science concentration/track in the summer of 2014. They were from two top-tier schools so that they would not leave so many questions unanswered. Content analysis, item analysis, item/test information, reliability analysis, and correlation analysis were conducted. The results indicated that the three examinations were comparable in contents; however, most items were found to be easy for the students so more challenging items are suggested to be included for distinguishing students in their mathematics competency. We suggest creating items that could provide more information for students with average and high mathematics competencies.

References

Jiang, C., Kim, D.H., Wang, C., & Wang, J. (2019). Premises and challenges of high-stakes examinations: National higher education entrance examination mathematics test scores in China. *Journal of Applied Educational and Policy Research, 4*(1), 1-21.

Woessmann, L. (2001). Why students in some countries do better: International evidence on the importance of education policy. *Education Matters, 1*(2), 67-74.