INVESTIGATION OF PISA 2012 COGNITIVE ITEMS IN TERMS OF DIFFERENTIAL ITEM FUNCTIONING BASED ON CULTURE

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Abstract
In this study, items in mathematics and science literacy sub-tests collected from PISA 2012 dataset were investigated in terms of differential item functioning (DIF). This study was carried out with equal sample sizes which means are high then OECD average scores (Hong-Kong and Finland) and which means are below then OECD average scores (Turkey and Russia). Only dichotomous variables were considered in this study. To determine differential item functioning across four countries generalized Mantel Haenszel and generalized logistic regression methods were used. Results showed that there were too many items including high level DIF (B and C).

Keywords: Differential item functioning, generalized logistic regression, generalized Mantel-Haenszel.