WORKSHOP ON COGNITIVE DIAGNOSIS MODELS 2019 (CDM2019) –
DORTMUND – 25./26.7.2019

Hierarchical Diagnostic Classification Modeling of Reading Comprehension

Mona Tabataee*
Tabaran Institute of Higher Education, Mashad Iran
E-Mail: Tabatabaee.mona@gmail.com

Abstract
The Hierarchical Diagnostic Classification Model (HDCM) reflects on the sequences of the presentation of the required materials and attributes for answering the items of a test correctly. In the present study, a foreign language reading comprehension test was analyzed using HDCM and the G-DINA to determine and compare respondents mastery profiles in the tests predefined skills and to illustrate the relationships among the attributes involved in the test in order to capture the effect of sequential teaching of materials on increasing the probability of getting an item a correct answer. The results showed that the G-DINA and one of the HDCMs fit the data well, however, although the results of HDCM showed the existence of attribute dependencies in reading comprehension test - which means some attributes of reading comprehension are mastered only when the prerequisite attributes have been mastered - the relative fit indices highlight significant difference between the G-DINA and HDCM, favoring G-DINA.

Keywords: Attribute, Diagnostic Classification Models (DCM), Generalized Deterministic Input Noisy and-gate (G-DINA), Hierarchical Diagnostic Classification Model (HDCM), Q-matrix, Reading Comprehension

*presenting author