

Consequences of using Rasch models for educational assessment: where are we today?

Claus H. Carstensen

Institute for Science Education at the University of Kiel

Educational Assessments may investigate student competencies in the context of their learning environments. In Large Scale Assessments like PISA, TIMSS or PIRLS, tests are typically administered in a booklet design with each student working on a fraction of the set of test items used. Results are reported on the level of populations. In order to illustrate what students can do, typical items are used to describe different levels of competence.

To obtain student competence estimates requires item response theory (IRT) models, a famous one is the simple logistic Model (Rasch, 1960). The Rasch model is, for example, underlying the analysis of all PISA data. In the presentation, key features of the model will be summarized and the benefit of using the Rasch model in PISA data analysis and reporting will be discussed.

The Rasch Model for dichotomous data has been generalized in many ways, e.g. for polytomous data, for multidimensional constructs, for mixture distributions, for systematically constructed items or generalized items and it is a restrictive member in the family of logistic item response models. The presentation will conclude with illustrating generalizations that are required to model data from educational studies and some future directions of research.