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A Multidimensionality-Based DIF Analysis Paradigm

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Abstract

A multidimensionality-based differential item functioning (DIF) analysis paradigm is presented that unifies the substantive and statistical DIF analysis approaches by linking both to a theoretically sound and mathematically rigorous multidimensional conceptualization of DIF. This paradigm has the potential (1) to improve understanding of the causes of DIF by formulating and testing substantive dimensionality-based DIF hypotheses; (2) to reduce Type 1 error through a better understanding of the possible multidimensionality of an appropriate matching criterion; and (3) to increase power through the testing of bundles of items measuring similar dimensions. Using this approach, DIF analysis is shown to have the potential for greater integration in the overall test development process.