

# What Does the WISC-IV Measure? Validation of the Scoring and CHC-based Interpretative Approaches

Hsin-Yi Chen

Department of Special Education,  
National Taiwan Normal University  
Professor

Yung-Hwa Chen

The Chinese Behavioral Science Coporation  
Professor

Timothy Z. Keith

Department of Educational Psychology,  
The University of Texas at Austin, TX, U.S.A  
Professor

Ben-Sheng Chang

Department of Psychology,  
Soochow University  
Associate Professor

## Abstract

The validity of WISC-IV current four-factor scoring structure and the Cattell-Horn-Carroll (CHC) theory-based models of the Wechsler Intelligence Scale for Children-Fourth Edition (WISC-IV) were investigated via the application of higher-order confirmatory factor analyses of scores from the Taiwan WISC-IV standardized sample ( $n = 968$ ). Results reveal that the WISC-IV measures the same construct across ages, the resulting interpretation could be applied to children with various age levels. Both the four-factor structure and CHC-based model were supported. Variance explained was similar across models. The general factor accounted for 2/3 of common variance. First order factors, in total, contributed an additional 1/3 of common variance. The WISC-IV measures crystallized ability (Gc), visual processing (Gv), fluid reasoning (Gf), short-term and working memory (Gsm), and processing speed (Gs). In particular, either separating Gf and Gv, or combining them as the Perceptual Reasoning Index (PRI) provides meaningful explanation. Arithmetic showed significant and split loadings. For children in Taiwan, Arithmetic appears a reflection of Gsm/Gf and Gc.

**Keywords:** CHC theory, higher order CFA, WISC-IV