



Faculty of **Education**  
The University of Hong Kong

## EDUCATIONAL AND PSYCHOLOGICAL MEASUREMENT COLLOQUIUM SERIES

### **Moving beyond statistical significance: Practical significance of goodness-of-fit assessment in item response theory models**

**Dr. Maggie Zhao**

Teaching and Learning Evaluation and Measurement Unit  
The University of Hong Kong

**November 22, 2018 (Thursday)**

**11:00 – 12:30**

**Room 108, Runme Shaw Building, HKU**

#### **Abstract**

Item response theory (IRT) has been increasingly applied in education, psychology, and health sciences. Detecting misfit using significance tests in the IRT context rarely addresses the impact/consequence of using misfitting items on the intended applications. This presentation seeks to recommend a process of IRT goodness-of-fit assessment, which involves identification of the presence of misfit (statistical significance) and evaluation of the impact of misfit (practical significance). Two empirical studies will be presented to illustrate the recommended process. The first study is based on a typical statewide educational assessment program, and the second study uses data from the Patient-Reported Outcome Measurement Information System (PROMIS). Further, a set of recommendations, issues, and tensions will be articulated in the presentation, with an aim of helping researchers and practitioners find practical ways to study model fit so as to investigate the validity of particular IRT models for achieving a specified purpose, and to improve the applications of IRT models with educational, psychological, and health data.

#### **About the Speaker**

Dr. Maggie Zhao is the Director of Teaching and Learning Evaluation and Measurement Unit at HKU. Maggie earned her doctorate in psychometrics from the University of Massachusetts, worked as a psychometrician for Educational Testing Service before joining HKU, and obtained extensive experience in leading large-scale assessment programs. With over ten years of academic and professional experiences, she has heavily engaged in various research projects in the advancement and application of quantitative methods in education, social, behavioral, and health sciences. She is also currently on the Research and Development Committee of the Hong Kong Examinations and Assessment Authority. Her work has been published in refereed journals and scholarly books, such as *Assessment, Research in Higher Education, Quality of Life Research*, and *Encyclopedia of Statistics in Behavioral Science*.

*Everyone is welcome to attend!*

*If interested, please confirm your attendance by sending an email to [kpsantos@hku.hk](mailto:kpsantos@hku.hk).*