William Boone, Ph.D.

Full Professor

Program in Learning Sciences and Human Development
Department of Educational Psychology
    Specializing in Evaluation, Measurement and Statistical Analysis in the
    Fields of Education, Business, and Healthcare
Miami University Distinguished Scholar

Education

Ph.D. Program in Measurement, Evaluation and Statistical Analysis (MESA),
Department of Education University of Chicago (1991).
Ph.D. advisor: Benjamin Wright

M.S. Geophysics University of Wisconsin-Madison (1985)

B.S. Geology Indiana University-Bloomington (1982)

Research Interests

Dr. Boone's research interests include the use of Rasch measurement techniques
and methodology to design, analyze, and revise questionnaires, surveys and tests.
His current work emphasizes instruments (e.g. questionnaires, surveys and tests)
used in the fields of business (market research), health care, and education. In his
research, Dr. Boone frequently explores the development of techniques to better
communicate analysis findings to stakeholders. Dr. Boone also frequently
addresses how to 1) improve the efficiency of data collection, 2) provide succinct

actionable guidance for decision makers, 3) reduce the cost per response, and 4) increase response rates. Groups using his guidance have been able to increase the quality of their data even with large fluctuations in respondent sample compositions and participation over time. His expertise has allowed organizations with an interest in the evaluation of questionnaire data to lower the per item cost of response data collection while improving the quality of actionable guidance.

Dr. Boone has worked within the field of questionnaire/survey design and analysis for over 30 years. A significant portion of his work concerns the application of Rasch measurement to the field of Science Education. During that time he has evaluated more than 1000 survey instruments which have targeted samples of respondents ranging in age from 5 years to adult. Selected instruments have also targeted respondents as a function of gender, ethnicity as well as other variables. He has been asked to provide evaluation, measurement and statistical analysis expertise to numerous individuals and organizations.

Select Awards

Fulbright Scholar
Miami University Distinguished Scholar
Student Choice Teaching Award – Indiana University-Bloomington
Rosenberg Award – University of Chicago MESA (Measurement, Evaluation and Statistical Analysis) Program
Chevron Oil Geophysics Scholarship – Indiana University-Bloomington
ARCO Geology Award – Indiana University-Bloomington

Select Presentations and Publications

During his career at Indiana University and at Miami University, Dr. Boone has authored and co-authored over 100 publications and reports. His CV lists over 200 professional presentations and workshops. He has served on the editorial review board of many peer reviewed scholarly journals.

Selected Rasch book publications include:

Rasch Analysis in the Human Sciences, Springer (Boone, Staver & Yale, 2014)

Advances in Rasch Analysis in the Human Sciences, Springer (Boone & Staver, 2020)

Rasch Measurement in Science Education, JAM Press (Eds. Liu & Boone, 2006)

Advances in Applications of Rasch measurement in Science Education, Springer (Eds. Liu & Boone, 2023)

There have been a total 102,000+ chapter downloads, and over 600 print copies sold for the two Rasch texts (2014, 2020) authored by Dr. Boone and published by Springer.

Dr. Boone is featured in a popular YouTube video entitled "An Introduction to Rasch Measurement" https://www.youtube.com/watch?v=AfTPWtc3EXE -that video has been viewed over 13,000 times.

A 2019 analysis of the work by Rasch researchers reported that Dr. Boone exhibited the highest burst strength of all Rasch researchers- this was viewed as reflecting "the growing importance of the author's papers and ideas." Dr. Boone presents Rasch workshops and Webinars throughout the world.

Teaching Interests

Dr. Boone has helped guide M.S. and Ph.D. thesis projects using statistical and psychometric techniques for the analysis of questionnaire/survey data. Primarily, Dr. Boone teaches graduate level courses in measurement/psychometrics, statistics, advanced research design and program evaluation. Dr. Boone also teaches an undergraduate course in evaluation and assessment.

He is well versed in the use of SPSS software for the analysis of survey data (frequency distributions, graphic presentations, analysis of central tendency, variability, correlation, analysis of variance, chi-squared computations utilizing crosstabs). Additionally, he is an expert in the use of advanced survey analysis software which facilitates, in part, the use of the Rasch model to compute logit scale scores. Such scores (outcome measures) are now being utilized by researchers in business, health care and education prior to parametric statistical tests. Dr. Boone is also an expert in the use of techniques that facilitate the evaluation of questionnaire validity and reliability.

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