

Reading List for PM Comprehensive Exam

Section I: Research Design

- Campbell, D. T., & Stanley, J. C. (1963). *Experimental and quasi-experimental designs for research*. Chicago: Rand McNally.
- Cook, T. D., & Campbell, D. T. (1979). *Quasi-experimentation: Design and analysis issues for field settings*. Boston: Houghton-Mifflin.
- Gall, M.D., Gall, J.P., & Borg, W.R. (2007). *Educational research: An introduction* (8th edition). Boston, MA: Allyn and Bacon.

Section I: Statistics I

- Gravetter, F. J., & Walnau, L. B. (2010). *Essentials of Statistics for the Behavioral Sciences*. Belmont, CA: Wadsworth.

Section I: Statistics II

- Cohen, J. & Cohen, P. (1983). *Applied multiple regression/correlation analysis for the behavioral sciences (2nd edition)*. Hillsdale, NJ: Lawrence Erlbaum.
- Frick, R. W. (1996). The appropriate use of null hypothesis testing. *Psychological Methods, 1*, 379-390.
- Humphreys, L. G. (1978). Doing research the hard way: Substituting analysis of variance for a problem in correlational analysis. *Journal of Educational Psychology, 70*, 873-876.

Section I: MANOVA/Multivariate Analysis

- Huberty, C. J., & Morris, J. D. (1989). Multivariate analysis versus multiple univariate analysis. *Psychological Bulletin, 105*, 302-308.
- Stevens, J. (2009). *Applied Multivariate Statistics for the Social Sciences*. Mahwah, NJ: Lawrence Erlbaum.

Section II: Classical Test Theory

Crocker, L., & Algina, J. (1986). *Introduction to classical and modern test theory*. New York: Holt, Rinehart and Winston.

Section II: Item Response Theory

Hambleton, R. K., Swaminathan, H., & Rogers, H. J. (1991). *Fundamentals of item response theory*. Newbury Park, CA: Sage.

Section II: Scaling

Aldenderfer, M. S., & Blashfield, R. K. (1984). *Cluster analysis*. Beverley Hills, CA: Sage.

Kruskal, J. B., & Wish, M. (1978). *Multidimensional scaling*. Newbury Park, CA: Sage.

Davison, M. L. (1992). *Multidimensional scaling*. Malabar, FL: Krieger.

Hattie, J. A. (1985). Methodology review: Assessing unidimensionality of a set of test items. *Applied Psychological Measurement*, 9, 139-164.

Section II: Validity

American Educational Research Association, American Psychological Association, & National Council on Measurement in Education. (1999). *Standards for educational and psychological testing*. Washington, D.C.: American Educational Research Association.

Kane, M. T. (1992). An argument-based approach to validity. *Psychological Bulletin*, 112, 527-535.

Kane, M. (2006). Validation. In R. L. Brennan (Ed). *Educational measurement* (4th edition, pp. 17-64). Washington, DC: American Council on Education/Praeger.

Messick, S. (1989). Validity. In R. Linn (Ed.), *Educational measurement*, (3rd ed., pp. 13-100). Washington, D.C.: American Council on Education.

Sireci, S. G. (1998). Gathering and analyzing content validity data. *Educational Assessment*, 5, 299-321.

Sireci, S. G. (2009). Packing and unpacking sources of validity evidence: History repeats itself again. In R. Lissitz (Ed.), *The Concept of Validity: Revisions, New Directions and Applications* (pp. 19-37). Charlotte, NC: Information Age Publishing Inc.

Section III: Applications

Hambleton, R. K., Swaminathan, H., & Rogers, H. J. (1991). *Fundamentals of item response theory*. Newbury Park, CA: Sage.

Candidate Preparation for the Psychometric Methods Portion of the Comprehensive Exam (Part of Day 2, all of Day 3)

I think if I were preparing for the 2012 exam, I would read the following:

1. Crocker and Algina (1986), Chapters 1 to 2, 5 to 7, 9 to 10, 14 to 15, 18, 20. All of the class handouts and the slides for both semesters would be worthwhile to read again.
2. Hambleton, Swaminathan, and Rogers (1991)—all of the chapters. All of the class handouts and slides for both semesters are worth reading again too.

I would also make sure I knew how to run BILOG and PARSCALE, WinGen3, and Resid Plots. Be sure you have the software and access to the manuals. I can assure you that you will need to run either BILOG or PARSCALE, and Resid Plots, during the third day of the exam. I expect too that the test data you work with will contain both multiple-choice and constructed response items.

Don't focus at all on memorizing formulas in my courses. I will present questions to you that are more general, and require you to demonstrate an understanding of the concepts (but I do not expect you to remember specific formulas), and to apply psychometric models and concepts to problems that arise in practice.

Tips: Spread your reading out over the spring by reading a couple of chapters and related slides and handouts each week. Also, be sure to practice running BILOG, PARSCALE, and Resid Plots at least once before the exam. It has been a year since you took the IRT courses, but I expect the problem on the third day will be IRT-based, though you can expect some emphasis on classical modeling too. If I can find some good data, you can expect to see an equating problem included on the exam.

If you have questions, don't hesitate to contact me, perhaps by email. Please be sure to give me a couple of days to answer because I won't always have email while I am away from the office. I am happy to come to one of your study meetings if you would like but after May 4, I will not be available because of a commitment off campus.

Good luck! Ron Hambleton