

# CURRICULUM VITA

**Dimiter M. Dimitrov**

**May, 2007**

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## DEGREES

**Ph. D. in Educational Psychology (Educational Measurement & Statistics)** from Southern Illinois University at Carbondale, 1995. (Dissertation topic: “*Cognitive Item Subordinations in Linear Logistic Test Modeling*”).

**Ph.D. in Mathematics (Mathematics Education)** from the Department of Mathematics at Sofia University "Kliment Ohridski", Bulgaria, 1984. (Dissertation topic: “*Acquisition of mathematics knowledge in the environment of foreign language education*”).

**Bachelor in Mathematics**, from the Department of Mathematics at Sofia University "Kliment Ohridski", Bulgaria.

**Current position:** Professor of Educational Measurement & Quantitative Research Methods in the Graduate School of Education, George Mason University, Fairfax, Virginia.

### Current Professional Appointments

**Editor** of *Measurement and Evaluation in Counseling and Development* [the official journal of the American Association for Assessment in Counseling and Education]

**Vice-President** of the American Educational Research Association (MWERA).

### Academic Experience

**Professor of Educational Measurement & Quantitative Research Methods** in the Graduate School of Education at George Mason University, Fairfax, Virginia (Spring 2007 – present).

**Associate Professor of Educational Measurement & Quantitative Research Methods** in the Graduate School of Education at George Mason University, Fairfax, Virginia (Fall 2003 – Spring 2007).

**Associate Professor of Educational Measurement & Statistics** in the Department of Educational Foundations and Special Services at the College and Graduate School of Education, Kent State University (2001 - 2003).

**Assistant Professor of Educational Measurement & Statistics** in the Department of Educational Foundations and Special Services (1995 - 2000) and Director of Bureau of Research (1997 - 1999) at the College and Graduate School of Education, Kent State University.

**Teaching Assistant** (1992-1995) and **Lecturer** (1995) of **Educational Statistics** at the Department of Educational Psychology, Southern Illinois University at Carbondale.

**Instructor of Mathematics and Computer Programming**, J.A.Logan Community College, Carbondale, Illinois (1994-1995) [during the Ph.D. program at SIUC].

**Associate Professor of Mathematics and Statistics in Education**, Department of Education at the University of Sofia, “Kliment Ohridski”, Bulgaria (1984-1991).

**Mathematics Instructor** at the Department of Mathematics - College for International Students, Sofia, Bulgaria (1977-1983).

## PUBLICATIONS

**Note.** Listed here are only publications in the USA (1995 - present). Prior publications (available upon request) consist of 2 textbooks and 15 refereed journal articles in the area of educational measurement, statistics, and mathematics published in Bulgarian, Russian, and French.

### Book Chapters/Manuals:

Dimitrov, D. M. (2007): **RELIABILITY.** In B. Erford (Ed.) *Assessment for Counselors* (pp. 99-122). Boston: Houghton-Mifflin/Lahaska Press.

Dimitrov, D.M. (2006). **VALIDATION OF COGNITIVE OPERATIONS AND PROCESSES ACROSS ABILITY LEVELS AND INDIVIDUAL TEST ITEMS.** In T. E. Scruggs & M. A. Mastropieri (Eds.) *Advances in Learning and Behavioral Disabilities, Vol. 19* (pp. 55-81). San Diego, CA: ELSEVIER, Ltd.

Dimitrov, D. M. (2007). **CORRELATION AND REGRESSION.** In B. Erford (Ed.) *Research and Evaluation in Counseling* (pp. 408-433). Boston: Houghton-Mifflin/Lahaska Press.

Dimitrov, D. M. (2007). **MULTIPLE REGRESSION.** In B. Erford (Ed.) *Research and Evaluation in Counseling* (pp. 471-495). Boston: Houghton-Mifflin/Lahaska Press.

Dimitrov, D. M.(2007). **MULTIVARIATE ANALYSIS OF VARIANCE.** In B. Erford (Ed.) *Research and Evaluation in Counseling* (pp. 496-512). Boston: Houghton-Mifflin/Lahaska Press.

Dimitrov, D. M. (2007). **FACTOR ANALYSIS AND OTHER MULTIVARIATE METHODS.** In B. Erford (Ed.) *Research and Evaluation in Counseling* (pp. 513-527). Boston: Houghton-Mifflin/Lahaska Press.

Dimitrov, D. M. (2007). **PARTIAL AND SEMIPARTIAL CORRELATIONS.** In B. Erford (Ed.) *Research and Evaluation in Counseling* (pp. 528-531). Boston: Houghton-Mifflin/Lahaska Press.

Dimitrov, D.M. (1997). **Manual with Test Bank to Accompany Elmore/Woehlke Basic Statistics.** New York: Longman.

### Refereed Journal Articles

Dimitrov, D. M. (in press). **Least squares distance method of cognitive validation and analysis for binary items using their IRT parameters.** *Applied Psychological Measurement* (vol. 31, 2007).

Thomas, C., & Dimitrov, D. M. (2007). **Effect of a teen pregnancy prevention**

- program on teen's attitudes toward sexuality: A latent trait modeling approach.** *Developmental Psychology*, 43(1), 173-185.
- Dimitrov, D. M. (2006). **Comparing groups on latent variables: A structural equation modeling approach.** *WORK: A Journal of Prevention, Assessment & Rehabilitation*, 26(4), 429-436.
- Dimitrov, D. M., & Smith, R. M. (2006). **Adjusted Rasch person-fit statistics.** *Journal of Applied Measurement*, 7(2), 170-183.
- Dimitrov, D.M., Henning, J. (2005). **A linear logistic test model of reading comprehension.** *Journal for the Advancement of Educational Research*, 1(1), 60-70.
- Dimitrov, D. M., & Rumrill, P. (2005). **Multivariate methods in rehabilitation research.** *WORK: A Journal of Prevention, Assessment & Rehabilitation*, 24(2), 205-212.
- Kamman, T., Muir, L., Koester, L.S., & Dimitrov, D.M. (2005). **Linking maternal perceptions to behavior: Nurturing attitudes and facial expressions of affect.** *Parenting: Science and Practice*, 5(3), 237-258.
- Dimitrov, D.M. (2003). **Marginal true-score measures and reliability of binary items as a function of their IRT parameters.** *Applied Psychological Measurement*, 27(6), 440-458.
- Dimitrov, D.M. (2003). **Reliability and true-score measures of binary items as a function of their Rasch difficulty parameter.** *Journal of Applied Measurement*, 4(3), 222-233.
- Dimitrov, D.M., & Raykov, T. (2003). **Validation of cognitive structures: A structural equation modeling approach.** *Multivariate Behavioral Research*, 38(1), 1-23.
- Dimitrov, D.M., & Rumrill, P. (2003). **Pretest-posttest designs in rehabilitation research.** *WORK: A Journal of Prevention, Assessment, & Rehabilitation*, 20(2), 159-165.
- Dimitrov, D.M., & Shelestak, D. (2003). **Psychometric analysis of performance on categories of client needs and nursing process with the NLN diagnostic readiness test.** *Journal of Nursing Measurement*, Vol. 11(3), 207-223.

- Dimitrov, D.M. (2002). **Reliability: Arguments for multiple perspectives and potential problems with generalization across studies.** *Educational and Psychological Measurement*, 62(5), 783-801.
- Dimitrov, D.M., McGee, S., & Howard, B. (2002). **Changes in students' science ability produced by multimedia learning environments: Application of the linear logistic model for change.** *School Science and Mathematics*, 102(1), 5-24.
- Dimitrov, D.M., Rumrill, P., Fitzgerald, S., & Hennessey, M., (2001). **Reliability in rehabilitation research.** *WORK: A Journal of Prevention, Assessment, & Rehabilitation*, 16, 159-164.
- Mutua, K., & Dimitrov, D.M. (2001). **Prediction of school enrolment of children with intellectual disabilities in Kenya: The role of parents' expectations, beliefs, and education.** *International Journal of Disability, Development, and Education*, 48, 179-191.
- Dimitrov, D.M. (2001). **An extended index of agreement among multiple raters.** In R Hashway (Ed.), *Annals of the Joint Meeting of the Association for the Advancement of Educational Research and the National Academy for Educational Research 1998-1999* (pp.309-315). Lanham, Maryland: University Press of America, Inc.
- Mutua, K., & Dimitrov, D.M. (2001). **Parents' expectations about future outcomes of children with mental retardation in Kenya: Differential effects of child's gender and severity of mental retardation.** *The Journal of Special Education*, 35(3), 172-180.
- Fitzgerald, S., Dimitrov, D.M., & Rumrill, P. (2001). **The basics of nonparametric research.** *WORK: A Journal of Prevention, Assessment, & Rehabilitation*, 16, 287-292.
- Dimitrov, D.M., Fitzgerald, S., & Rumrill, P. (2000). **Multiple regression in rehabilitation research.** *WORK: A Journal of Prevention, Assessment, & Rehabilitation*, 14, 1-7.
- Dimitrov, D.M., & Shelestak, D. (2000). **Learning outcomes related to success on NCLEXRN.** *Nurse Educator*, 26(3), 108.

- Newman, I., Dimitrov, D.M., & Waechter, D. (2000). **Factor structure of perceived individualization of instruction: Argument for multiple perspective.** *Educational Research Quarterly*, 24(1), 20-29.
- Dimitrov, D.M. (1999). **Gender differences in science achievement: Differential effect of ability, response format, and strands of learning outcomes.** *School Science & Mathematics*, 99(8), 445-450.
- Dimitrov, D.M. (1999). **Gender, ethnicity, ability, and type of item response in mathematics proficiency of fifth graders.** *Journal of Research in Education*, 9, 80-83.
- Dimitrov, D.M. (1999). **Multimethod analysis of mathematics achievement tests.** *Mid-Western Educational Researcher*, 12, 15-19.

## Refereed Paper Presentations

### International and National Conferences

- Dimitrov, D.M., Romero, S. J., Ximenez, C., & Ponsoda, V. (April, 2007). **An IRT-based analysis of arithmetic test items.** Paper presented at the meeting of the American Educational Research Association. Chicago, Illinois.
- Dimitrov, D.M. (April, 2007). **Early evaluation of NSF's MSP Program: Early changes in K-12 student achievement.** Paper presented at the meeting of the American Educational Research Association. Chicago, Illinois.
- Romero, S., Ponsoda, G., Dimitrov, D., & Ximenez, C. (February, 2007). **A simulation study on the robustness of a least squares distance method of cognitive validation.** Paper presented at the 10th Congress on Research Methodology in Social Sciences. College of Psychology. University of Barcelona, Spain.
- Dimitrov, D.M. (2005, April). **Conditional validation of cognitive structures with Rasch measurement.** Paper presented at the meeting of the American Educational Research Association. Montreal, Canada.
- Dimitrov, D. M. (2004, April). **Re-estimation of ability in the Rasch model.** Paper presented at the meeting of the American Educational Research Association. San Diego, CA.
- Dimitrov, D. M., & Smith, R. M. (2004, April). **Adjusted Rasch person-fit statistics.** Paper presented at the meeting of the American Educational Research Association.

San Diego, CA.

Dimitrov, D.M. (2003, April). **Reliability of true cutting scores for Rasch calibrated items.** Paper presented at the meeting of the American Educational Research Association. Chicago, IL.

Dimitrov, D.M. (2003, April). **Expected values and reliability of number-right scores for IRT calibrated items.** Paper presented at the meeting of the American Educational Research Association. Chicago, IL.

McGee, S., Dimitrov, D.M., Kirby, J., & Croft, S. (2003, April). **Three-year study of Astronomy Village Implementation.** Paper presented at the meeting of the American Educational Research Association. Chicago, IL.

Dimitrov, D.M. (2002, April). **Error variance of Rasch measurement with logistic ability distributions.** Paper presented at the meeting of the American Educational Research Association. New Orleans, Louisiana.

McGee, S. & Dimitrov, D.M. (2002, April). **Using design experiments to investigate long-term program success.** Paper presented at the meeting of the American Educational Research Association. New Orleans, Louisiana.

Dimitrov, D.M. (2001, October). **Reliability of Rasch measurement with skewed ability distributions.** Paper presented at the International Conference on Objective Measurement. Chicago, IL.

Dimitrov, D.M.(2001, December). **Pseudo-lognormal distributions of ability underlying test performance.** Paper presented at the meeting of the Association for the Advancement in Educational Research. Ponte Vedra, FL.

Nikolova, O., & Dimitrov, D.M.(2001, December). **Item response model for difficulty of French grammar tests.** Paper presented at the meeting of the Association for the Advancement in Educational Research. Ponte Vedra, FL.

Dimitrov, D.M. (2000, November). **Correspondence analysis of interrater agreement.** Paper presented at the meeting of the Association for the Advancement in Educational Research. Ponte Vedra, FL.

Dimitrov, D.M., & Henning, J. (2000, November). **A Linear Logistic Test Model of Reading Comprehension Difficulty.** Paper presented at the meeting of the Association for the Advancement in Educational Research. Ponte Vedra, FL.

Dimitrov, D.M. (1999, May). **Extension and generalizability of agreement**

**coefficients.** Paper presented at the International Conference of The Institute for Operational Research and the Management Sciences (INFORMS). Cincinnati, OH.

Dimitrov, D.M. (1999, April). **Mathematics and science achievement profiles by gender, race, ability, and type of item response.** Paper presented at the meeting of the American Educational Research Association. Montreal, Canada.

Muir, L., & Dimitrov, D.M. (1999, April). **Changes in maternal attitudes from pregnancy through the second year.** Presented at the meeting of the American Educational Research Association. April 19-23, Montreal, Canada.

Dimitrov, D.M. (1998, December). **An extended index of agreement among multiple raters.** Paper presented at the meeting of the Association for the Advancement in Educational Research. Ponte Vedra, FL.

Dimitrov, D.M. (1998, December). **Race and type of item response in the Ohio Off-Grade Proficiency Test-Mathematics.** Paper presented at the meeting of the Association for the Advancement in Educational Research. Ponte Vedra, FL.

Guidubaldi, J., Perry, J., Redmond, C., & Dimitrov, D. (August, 1999). **Reviving fatherhood: Empirical foundations and policy initiatives.** Symposium presentation at the American Association Annual Convention, Division 51: Society for the Psychological Study of Men and Masculinity; Boston, Massachusetts.

Dimitrov, D.M. (1996, April). **Monte Carlo approach for reliability estimations in generalizability studies.** Paper presented at the meeting of the American Educational Research Association. New York, NY. (ERIC Document Reproduction Services, ED).

#### **INVITED PRESENTATIONS AT ANNUAL CONFERENCES OF THE AMERICAN EDUCATIONAL RESEARCH ASSOCIATION (AERA):**

Dimitrov, D.M. (April, 2007): **Getting Published: A Panel of Journal Editors and Emerging Scholars.** Presentation at the meeting of the American Educational Research Association. Chicago, Illinois.

Dimitrov, D.M. (April, 2005): **Editors' Mentoring Roundtable Closed Session.** Presentation at the meeting of the American Educational Research Association. Montreal, Canada.

Dimitrov, D.M. (April, 2005): **Presidential Invited Session: Complementary Research Methods: Meet the Authors and Reviewers.** Presentation at the meeting of the

American Educational Research Association. Montreal, Canada.

Dimitrov, D.M. (April, 2005): **Getting Published: A Panel of Journal Editors and Emerging Scholars.** Presentation at the meeting of the American Educational Research Association. Montreal, Canada

Dimitrov, D.M. (April, 2006): **Editors' Mentoring Roundtable Closed Session.** Presentation at the meeting of the American Educational Research Association. San Francisco, CA.

Dimitrov, D.M. (April, 2006): **Getting Published: A Panel of Journal Editors and Emerging Scholars.** Presentation at the meeting of the American Educational Research Association. San Francisco, CA.

### **Refereed Papers Presented at Annual Meetings of Regional Associations of Educational Research:**

Dimitrov, D.M., Ximenez, C., Ponsoda, V., & Romero, S. (October, 2006). **Bridging item response theory to classical true-score measures of student performance on basic arithmetic operations.** Paper presented the meeting of the Mid-Western Educational Research Association. Columbus, Ohio.

Dimitrov, D.M., Romero, S., Ximenes, C., & Ponsoda, V. (October, 2006). **Psychometric analysis of cognitive operations underlying student performance on basic arithmetic operations: An application of the least squares distance method.** Paper presented the meeting of the Mid-Western Educational Research Association. Columbus, Ohio.

Dimitrov, D. M. (October, 2005). **An IRT approach to validation of cognitive operations for test items.** Paper presented at the meeting of the Mid-Western Educational Research Association. Columbus, Ohio.

Dimitrov, D. M., & Thomas, C. L. (October, 2005). **Latent trait modeling of longitudinal changes in treatment effects on constructs of teens' sexual abstinence.** Paper presented at the meeting of the Mid-Western Educational Research Association. Columbus, Ohio.

Thomas, C. L., & Dimitrov, D. M. (October, 2005). **Validation of a retrospective classroom learning procedure.** Paper presented at the meeting of the Mid-Western Educational Research Association. Columbus, Ohio.

Dimitrov, D. M. (October, 2004). **Methods of "virtual items" and "virtual persons" in the analysis of pretest to posttest changes in true domain scores.** Paper presented at the meeting of the Mid-Western Educational Research Association. Columbus, Ohio.

Thomas, C.L., & Dimitrov, D. M. (October, 2004). **The effect of interventions in a teen**

**pregnancy program on constructs of teens' attitudes and behaviors toward sexuality.** Paper presented at the meeting of the Mid-Western Educational Research Association. Columbus, Ohio.

Dimitrov, D. M. (October, 2004). **Some misconceptions still "at large" in educational research.** Invited paper presentation at the meeting of the Mid-Western Educational Research Association. Columbus, Ohio.

Dimitrov, D.M. (October, 2003). **Adjusted Rasch person-fit statistics.** Paper presented at the meeting of the Mid-Western Educational Research Association. Columbus, Ohio.

Dimitrov, D.M. (October, 2003). **Re-estimation of ability in the Rasch model.** Paper presented at the meeting of the Mid-Western Educational Research Association. Columbus, Ohio.

Dimitrov, D.M. (October, 2002). **Classical error variance and true scores as a function of item parameters estimated with the two-parameter logistic model.** Paper presented at the meeting of the Mid-Western Educational Research Association. Columbus, Ohio.

Dimitrov, D.M., & Shelestak, D. (October, 2002). **Analysis of Performance on Categories of the NLN Diagnostic Readiness Test: An item response theory approach.** Paper presented at the meeting of the Mid-Western Educational Research Association. Columbus, Ohio.

Dimitrov, D.M. (2001, October). **Reliability and standard error of measurement related to parameters of items and ability distributions.** Paper presented at the meeting of the Mid-Western Educational Research Association. Chicago, IL.

Dimitrov, D.M. (2000, October). **Item Response Analysis of Cognitive Structure of a Test.** Paper presented at the meeting of the Mid-Western Educational Research Association. Chicago, IL.

Newman, I., Waechter, D., & Dimitrov, D.M. (2000, February). **Effect training on the underlying factor structure on perceived individualization of instruction.** Paper presented at the meeting of the Eastern Educational Research Association. Hilton Head, SC.

Dimitrov, D.M., & Mutua, K. (1999). **Logistic regression model for the prediction of school enrollment of children with disabilities in Kenya.** Paper presented at the meeting of the Mid-Western Educational Research Association. October 13-16, 99, Chicago, IL.

Dimitrov, D. M. (1999, February). **System of item subordinations in the validation of item difficulty models.** Paper presented at the meeting of the Eastern Educational Research Association. Hilton Head, SC.

- Dimitrov, D. M. (1999, February). **Reading and mathematics proficiency of fifth graders by gender, race, ability, and type of item response.** Paper presented at the meeting of the Eastern Educational Research Association. Hilton Head, SC.
- Dimitrov, D. M. (1998, October). **Partial credit analysis of mathematics items from the Ohio Off-Grade Proficiency Tests.** Paper presented at the meeting of the Mid-Western Educational Research Association. Chicago, IL.
- Dimitrov, D. M., & Obiekwe, J. (1998, February). **Validation of item difficulty components for algebra problems.** Paper presented at the meeting of the Eastern Educational Research Association. Tampa, FL.
- Schwartz, M., & Dimitrov, D. M. (1998, February). **A study of college trustee consensus.** Paper presented at the meeting of the Eastern Educational Research Association. Tampa, FL.
- Dimitrov, D. M. (1997, October). **Reliability of g-wise kappas for multiple-rater agreements.** Paper presented at the meeting of the Mid-Western Educational Research Association. Chicago, IL.
- Dimitrov, D. M., & Gallagher, M. (1997, October). **Combining IRT, generalizability theory, and cognitive methods in the analysis of standardized mathematics achievement tests.** Paper presented at the meeting of the Mid-Western Educational Research Association. Chicago, IL.
- Dimitrov, D. M. (1997, February). **Regression analysis of cognitively subordinated items.** Paper presented at the meeting of the Eastern Educational Research Association. Hilton Head, SC.
- Dimitrov, D. M. (1997, February). **An educationally suitable derivation of the expected mean squares between groups for ANOVA.** Paper presented at the meeting of the Eastern Educational Research Association. Hilton Head, SC.
- Dimitrov, D. M. (1996, October). **Validation of item difficulty models.** Paper presented at the meeting of the Mid-Western Educational Research Association. Chicago, IL.
- Dimitrov, D. M. (1995, October). **On the cutting score determination in dichotomous classifications.** Paper presented at the meeting of the Mid-Western Educational Research Association. Chicago, IL. (ERIC, ED # TM025074).
- Miller, S., & Dimitrov, D. M. (1995, November). **The utilization of peer networks to teach self-determination skills to youth with severe behavioral disabilities.** Paper presented at the meeting of the Teacher Education for Children with Behavioral Disorders (TECBD). Tempe, Arizona.

## EVALUATION PROJECTS:

- **Evaluation of the National Mathematics and Science Partnership (MSP) Program:** A multi-million grant awarded by the National Science Foundation to an evaluation team from George Mason University, Vanderbilt University, and the COSMOS Corporation for evaluation of the national MSP program [62 MSP projects nationwide]. [*My responsibilities:* leading the substudy of a large-scale quantitative evaluation based on latent-trait hierarchical growth modeling: **2005-2008**].
- **Evaluation of WeCare@School – A wireless emergency care information service for schools** - grant awarded by the U.S. Department of Commerce to Fairfax Public Schools. [Principle investigator for the project's external evaluation; **2005-2007**].
- **Evaluation of the “Astronomy Village” Program for Science Education (Grade 9-11).** A Grant of the Center for Educational Technology (CET) at Wheeling Jesuit University, Wheeling, West Virginia (2000-2002). [Principal investigator]
- **Evaluation of a Reduced Class Size Program** (A Grant with the Akron Public Schools, Akron, Ohio, 2000).
- **Evaluation of Project “Wheelbarrow” of the Canton City Schools** (Canton City Schools, Canton, Ohio, 1999). [Principal investigator]
- **Evaluation of the “Results for Kids” Program** (A Grant with the Summit Educational Center, Akron, Ohio, 1998).
- **Evaluation and Analysis of Perception Data on Summit County Professional Development Services for Educators** (Summit Education Initiative, Akron, 1998).
- **Validation of Surveys with a Program of the Hattie Lorlham Foundation** (Kent, Ohio, 1998/99).

## Technical Reports on Evaluation Projects:

- Dimitrov, D. M. (2006). **Trends in MSP-Related Changes With Three-Year MIS Data: 2002/03, 2003/04, and 2004/05.** Washington, DC: National Science Foundation [Math and Science Partnership Programs].
- Dimitrov, D. M. (2005). **Initial Trends in MSP-Related Changes With Two-Year MIS Data: 2002/03 and 2003/04.** Washington, DC: National Science Foundation [Math and Science Partnership Programs].
- Dimitrov, D.M. (2005). **WeCare@School: A Wireless Emergency Care Information Service for Schools.** Evaluation Report. Fairfax County Public Schools [U.S. Department of Commerce].

Dimitrov, D. M. (2003, March). **Measurement and Statistical Analysis of Rater Agreement in Grading Third Year Medical Students.** (Contractor: Office of Academic Affairs, Northeastern Ohio Universities, College of Medicine)

Dimitrov, D.M. (2002, November). **Measurement and Statistical Analysis in Support of Research of the Center for Educational Technology (CET) at Wheeling Jesuit University,** Wheeling, West Virginia.

Newman, I., Waechter, D., & Dimitrov, D. M. (2000, April). **Evaluation of Reduced Class Size Program in the Akron Public Schools.** Technical Report. Akron Public Schools.

Behner, D., & Dimitrov, D. M. (1999, July). **Comparative Effect of Project Wheelbarrow. Technical Report. Canton City Schools, Canton, OH.**

Mahoney, C., Telzrow, C., Shnelker, D., & Dimitrov, D. M. (1998, November). **Summit Educational Initiative/Task Force: Professional Development Focus Group. Technical Report. Bureau of Research Training and Services. College Education, Kent State University.**

**DEVELOPED SOFTWARE [COMPUTER PROGRAMS] FOR MEASUREMENT AND STATISTICAL METHODS AND PROCEDURES IN EDUCATION RESEARCH:**

Dimitrov, D.M. (2005). **LSDIM: A Computer Program (in MATLAB) for Validation and Analysis of Cognitive Operations and Processes.** Graduate School of Education at George Mason University, Fairfax, Virginia, USA.

Dimitrov, D.M. (2005). **TRUESA: A Computer Program (in MATLAB) for True-Score Analysis of Binary Items Based on Their IRT Parameters.** Graduate School of Education at George Mason University, Fairfax, Virginia, USA.

Dimitrov, D.M. (2004). **RASCH-FIT: A Computer Program (in C++) for Person and Item Fit of Data With the Binary Rasch Model.** Graduate School of Education at George Mason University, Fairfax, Virginia, USA.

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*Note:* **LSDIM** is a computer program for validation and analysis of cognitive operations and processes. The theoretical model for **LSDIM** is provided (in press) in *Applied Psychological Measurement*. The theoretical model for **TRUESA** is published in *Applied Psychological Measurement* (2003), Vol. 27 (6), pp. 440-458. The theoretical model for **RASCH-FIT** is published in *Journal of Applied Measurement* (2003), Vol. 4(3), pp. 222-233.

**TEACHING:**

Courses Taught at Kent State University (Fall 1995 – Summer 2003):

**EDPF- 88791 Classical Test Theory (3 hrs)\***  
**EDPF- 88791 Item Response Theory (3 hrs)\***  
**EDPF- 88791 Generalizability Theory (3 hrs)\***  
**EDUC-75510 Educational Statistics I (3 hrs)**  
**EDPF- 78716 Educational Statistics II (3 hrs)**  
**EDPF- 78728 Educational Statistics III (3 hrs)**  
**EDUC-85515 Quantitative Research in Education (3 hrs)**  
**EDUC-85517 Advanced Quantitative Research in Education (3 hrs)\***  
**EDPF- 88791 Factor Analysis (3 hrs)\***  
**EDPF- 88791 Multivariate Statistical Methods (3 hrs)\***  
**EDPF- 78728 Comparative Research (3 hrs)**  
**EDPF- 68807 Evaluation in Education (3 hrs)**

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\* Primary instructor for the course

Courses Taught at George Mason University, Fall 2003 –present:

**EDRS 821** Advanced Applications of Quantitative Methods  
**EDRS 811** Quantitative Methods in Education Research  
**EDRS 810** Problems and Methods in Educational Research  
**EDRS 630** Educational Assessment  
**EDRS 620** Quantitative Inquiry in Education

**Workshops:**

META METRIX, Inc., Durham, NC – **Validation of cognitive test structures** (2005)  
 Wheeling Jesuit University , WV - **Rasch models for measurement of change** (2001)  
 University of Montana at Missoula - **Reliability issues** (Invited session, 2001)  
 Akron Board of Education - **Program Evaluation** (1999)  
 Kent State University -**Critical Issues in Education /Assessment & Evaluation** (1997)  
 Kent State University -**Statistical Software** (1997)

## SERVICE TO THE PROFESSION

**Editor** of a professional journal:

*Measurement and Evaluation in Counseling and Development* (2005-present)

**Member of the Editorial Board** for three professional journals:

*Educational Researcher* (December 2006 – present)

*Journal of Applied Measurement* (January 2006 – present)

*Research in the Schools* (April 2005 – present)

**Reviewer for professional journals:**

- *Psychometrika* (2005, 2006, 2007)
- *Applied Psychological Measurement* (2006)
- *American Educational Research Journal: Teaching, Learning, & Human Development* (2006)
- *Statistics in Medicine* (2006)
- *International Online Journal on Science and Mathematics Education* (2005)
- *Educational and Psychological Measurement* (2002, 2007)
- *Measurement and Evaluation in Counseling and Development* (2000 - present)
- *Applied Measurement in Education* (1995)

**Reviewer (books/book chapters) for Publishing Companies:**

- Allyn & Bacon (2007)
- McGraw Hill (2004)
- Lawrence Erlbaum Associates (2004)

## Appointments with National and Regional Professional Associations

- **Vice-President/President-Elect** of the Mid-Western Educational Research Association (MWERA; 2005-present). **Program Chair** for the 2007 MWERA Annual Meeting.
- **Director of Division D** (Measurement and Research Methodology) of the Mid-Western Educational Research Association (2002-2004).
- **Regional Officer** of the Association for the Advancement of Educational Research for the state of Ohio (1998 - 2002).

**Chair, Discussant, and/or Proposal Reviewer of Measurement, Research & Statistics Sessions at National and Regional Educational Research Association Conferences:**

American Educational Research Association (AERA)

AERA'2003 (April 21-25, Chicago, IL): **Reviewer**

AERA'2002 (April 1-5, New Orleans): **Reviewer**

#### **Mid-Western Educational Research Association (MWERA)**

MWERA' 2006 (October 11-14, Columbus, Ohio): **Discussant**

MWERA' 2005 (October 12-15, Columbus, Ohio): **Reviewer**

MWERA' 2004 (October 13-16, Columbus, Ohio): **Reviewer & Discussant**

MWERA' 2003 (October 15-18, Columbus, Ohio): **Reviewer & Discussant**

MWERA'2001 (October 24-27, 2000, Chicago, IL): **Reviewer & Discussant**

MWERA'2000 (October 24-27, 2000, Chicago, IL): **Reviewer & Discussant**

MWERA'99 (October 13-16, 1999, Chicago, IL); **Reviewer**

MWERA' 98 (October 14-17, 1998; Chicago); **Chair**

MWERA'99 (October 13-16, 1998, Chicago, IL); **Reviewer**

#### **Association for the Advancement of Educational Research (AAER)**

AAER'2000 (Dec. 3-5, 1998; Ponte Vedra, FL): **Reviewer, Discussant, & Chair**

AAER'99 (Dec. 3-5, 1998; Ponte Vedra, FL): **Reviewer, Discussant, & Chair**

AAER'98 (Dec. 3-5, 1998; Ponte Vedra, FL): **Chair**

#### **Eastern Educational Research Association (EERA)**

EERA'98 (February 25-28, 1998; Tampa, FL); **Discussant**

EERA'97 (February 19-22, 1997; Hilton Head, SC); **Chair & Discussant**

#### **CURRENT PROFESSIONAL MEMBERSHIP:**

- American Educational Research Association (AERA)
- PSYCHOMETRIC SOCIETY
- Mid-Western Educational Research Association (MWERA)
- Association for Assessment in Counseling and Education (AACE)

**PROGRAMMING AND SOFTWARE EXPERIENCE:**

1. Programming skills and experience in **C++**, **MATLAB**, **BASIC**, and **FORTRAN**.

2. Experience with statistical software:

**SPSS**, **SAS**, **MINITAB**, **GB-STAT**, **Sigma-Plot**,  
**Mplus** (3.0): Statistical Analysis With Latent Variables & HLM  
**Amos** (4.0): Structural Equation Modeling  
**GENOVA** (Generalizability Theory Analysis),  
**MicroFACT** (Factor Analysis with Ordered Polytomous Data),

3. Experience with measurement software:

**FACETS** -Rasch Measurement Computer Program  
**RASCAL** - Rasch Analysis Program  
**LPCM-WIN 1.0** - Structural Rasch Modeling Program  
**XCALIBRE** - Marginal Maximum-Likelihood Estimation Program (2- and 3-LPM)  
**PARSCALE** - (IRT Analysis of Rating Scale Data)  
**MULTILOG** -A Computer Program for IRT Analysis  
**EQUATE 2.0** -A Computer Program for IRT Equating  
**WINMIRA** – A Computer Program for IRT Mixture Modeling

4. Experience with mathematical software: **MATLAB 5.3**