

Curriculum Vitae
Amy B. Holmes

Vanderbilt University Peabody College
Department of Teaching & Learning
Box 230, GPC, 230 Appleton Place
Nashville, TN 37203

850.603.9411
amy.b.holmes@vanderbilt.edu

RESEARCH INTERESTS

Design-based research, diversity and equity in STEM education, teacher education

EDUCATION

Doctor of Philosophy	Vanderbilt University, Nashville, TN (Anticipated 2015) Peabody College, Department of Teaching & Learning <i>IES Predoctoral Training Grant Fellow</i> Learning, Teaching, & Diversity Specialization: Development, Learning, and Diversity Concentration: Research Methodology Advisor: Richard Lehrer
Master of Science	The University of Tennessee, Knoxville, TN (2006) College of Education, Health, & Human Sciences Specialization: Teacher Education/Elementary Education
Bachelor of Arts	The University of Tennessee, Knoxville, TN (2005) University Honors Program College of Arts & Sciences Major: Psychology; Minor: Elementary Education

PROFESSIONAL EXPERIENCE

Research Experience

2010-present	Graduate Research Assistant, IES Fellow, Vanderbilt University, Peabody College, Nashville, TN
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Understanding Space through Engineering Design (2013-present)

Responsibilities:

- Prepared IRB documentation and grant reports
- Lead design study in third grade classes; co-taught curricular units
- Co-develop learning progressions, curricula, interviews, and assessments in spatial mathematics and engineering for grades K-5
- Conduct cognitive interviews with students in spatial mathematics and engineering
- Conduct focus group and individual teacher interviews
- Collect observational data in teacher classrooms
- Provide professional development and ongoing support for teachers
- Code, manage, and analyze qualitative data using NVivo and Studiocode
- Manage and analyze quantitative data using R, ConQuest, and Stata

Mentors: Rich Lehrer & Leona Schauble

*Straight on Plane, Cylinder, and Sphere: A Teaching Experiment (2012-2014)*Responsibilities:

- Prepared IRB documentation and reports
- Co-designed and co-conducted cognitive interviews and small group teaching sessions with elementary students
- Collected observational data during interviews and teaching sessions
- Managed and analyzed data using NVivo and Studiocode

Mentor: Rich Lehrer

*Developing and Integrating Spatial Mathematics and Engineering (2012-2013)*Responsibilities:

- Prepared IRB documentation and grant reports
- Lead design study in third grade classes; co-taught curricular units
- Co-develop learning progressions, curricula, interviews, and assessments in spatial mathematics and engineering for grades K-5
- Conduct cognitive interviews with students in spatial mathematics and engineering
- Conduct focus group and individual teacher interviews
- Collect observational data in teacher classrooms
- Provide professional development and ongoing support for teachers
- Code, manage, and analyze qualitative data using NVivo and Studiocode
- Manage and analyze quantitative data using R, ConQuest, and Stata

Mentors: Rich Lehrer & Leona Schauble

*Innovative Computer-based Formative Assessment via a Development, Delivery Scoring, and Report-Generating System (2012-2013)*Responsibilities:

- Provided professional development, curricular materials, and ongoing support for teacher implementation of assessment program

Mentor: Rich Lehrer

*Self-Regulation Measurement Validation Study (2011-2012)*Responsibilities:

- Conducted student assessments and teacher observations
- Coded and managed data in FileMaker

Mentors: Dale Farran, Mark Lipsey, & Sandra Jo Wilson

*Teaching & Learning in Urban Schools Program Evaluation (2010-2012)*Responsibilities:

- Co-developed interview protocol and conducted teacher interviews
- Co-developed and conducted student surveys
- Transcribed and coded interview data

Mentors: Mark Lipsey & Rachael Tanner-Smith

*Tools of the Mind Prekindergarten Curriculum Evaluation (2010-2012)*Responsibilities:

- Conducted student assessments and teacher observations
- Coded and managed data in FileMaker
- Analyzed data in SPSS using hierarchical linear modeling techniques

Mentors: Dale Farran, Mark Lipsey, & Sandra Jo Wilson

Post-Secondary Teaching Experience

2011-2014 *Guest Lecturer*, Educational Psychology and Human Development, Lipscomb University, Nashville, TN

2010-2011 *Guest Lecturer*, Educational Psychology and Human Development, Belmont University, Nashville, TN

K-12 Teaching Experience

2012-2013 *Instructor*, Summer Academy at Vanderbilt for the Young (SAVY), Vanderbilt University, Nashville, TN. Taught elementary grades gifted humanities classes

2008-2010 *Fifth grade teacher*, Northwood Elementary School, Crestview, FL. Served as school science lead teacher, grade level team leader, science club and science fair faculty advisor, and mathematics and science committee member

2007-2008 *Fourth grade teacher*, Antioch Elementary School, Crestview, FL. Served as grade level technology consultant and writing committee member

2006-2007 *Sixth grade Gifted & Talented humanities teacher*, Charles Townes Center at Sterling School, Greenville, SC. Served as school technology consultant, Youth in Government faculty advisor, and ELA and social studies committee member

Consulting

2011-2012 *Elementary mathematics consultant*, Read Tennessee Early Grades Math Toolkit, The University of Tennessee, Knoxville, TN

LICENSURE

Florida Professional K-6 License, South Carolina Professional K-6 License, Tennessee Professional K-8 License

HONORS & AWARDS

2010-2015 IES Predoctoral Fellowship. *Experimental Educational Research Training* grant, number R305B080025.

- 2005-2006 Claxton Medal and Graduate Scholarship, Dale and Alberta Lowe Wantling Scholarship, J. Clayton Arnold Scholarship, The University of Tennessee, Knoxville, TN
- 2001-2005 Bicentennial and Alumni Valedictorian Scholarships, The University of Tennessee, Knoxville, TN

PRESENTATIONS

Holmes, A. (2014, April). *When progress poses problems: Taming the monsters of mathematics*. Paper presented at the meeting of the American Educational Research Association, Division B, Philadelphia, PA.

Holmes, A. (2013, March). *Effects of manipulative use on PK-12 mathematics achievement: A meta-analysis*. Poster presented at the meeting of Society for Research in Educational Effectiveness, Washington, DC.

Anthony, K., **Holmes, A.**, Farran, D., Lipsey, M., Clements, D., Sarama, J., & Hofer, K. (2011, September). *The effect of time spent on mathematics-related computer activities on children's achievement outcomes in pre-kindergarten*. In D. Clements (Chair), *Early mathematics education for all: Evaluation of an intervention using multiple methodologies and outcomes*. Symposium conducted at the meeting of Society for Research in Educational Effectiveness, Washington, DC.

Holmes, A., & Fuhs, M. (2011, Aug). Relationships between classroom organization and child outcomes in Tools and non-Tools classrooms using *The Narrative Record*. Paper presented at the 2011 *Tools of the Mind* curriculum developer meeting, Nashville, TN.

Holmes, A. (2009, June). Teaching literacy in the content areas. Poster presented at the 2009 Okaloosa County Literacy Fair, Niceville, FL.

PUBLICATIONS/MANUSCRIPTS

Holmes, A. When progress poses problems: Taming the monsters of mathematics. *Philosophy of Education Society*.

Holmes, A. Effects of manipulative use on PK-12 mathematics achievement: A meta-analysis. *Campbell Collaboration*.

Lehrer, R., **Holmes, A.**, & Henderson, D. Investigating resources and instructional supports for young children's spatial reasoning.

AFFILIATIONS & MEMBERSHIPS

American Educational Research Association (AERA)
International Society of the Learning Sciences (ISLS)
National Council of Teachers of Mathematics (NCTM)

Phi Beta Kappa
Phi Delta Kappa

SERVICE

National/International

National Council of Teachers of Mathematics conference (2014)
Phi Delta Kappa, Future Educators Association conference (2012)

University

Educational Psychology and Human Development, Lipscomb University (2011-2014)
Educational Psychology and Human Development, Belmont University (2010)

Community

Grant writer and administrative volunteer, Alaqua Animal Refuge (2015-present)
Treasurer, Sunsail Property Owners Association (2015-present)
Educational services volunteer, Nashville Rescue Mission (2012-2014)
Volunteer, Nashville Opera (2012-2013)
Gifted education independent study project consultant, Edmonson Elementary School,
Williamson County Schools, Brentwood, TN (2012)