

JERILYNN LEPAK

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EDUCATION

Michigan State University, East Lansing, MI. Doctorate, Program in Mathematics Education	2013
University of Tennessee, Knoxville, TN Department of Mathematics (18 credits toward MA in Applied Mathematics)	
Winona State University, Winona, MN Bachelor of Science, Mathematics Education	1996
University of Wisconsin, Madison, Wisconsin Bachelor of Arts, International Relations	1990

RESEARCH EXPERIENCE

Current Research. <i>Understanding Prospective Teachers' Knowledge for Teaching</i> This study seeks to identify prospective teachers' conceptions of and flexibility with their knowledge of fractions, and ways flexibility is evidenced in multiple solution strategies including representations, operations, and conceptual and procedural understanding. Associated with this, this study seeks to identify how prospective teachers' pedagogical content knowledge impacts their approach to hypothetical students' solutions of similar problems.	Present
Post-Doctoral Position. <i>Algebra Teaching Study.</i> Principal Investigators: Dr. Alan Schoenfeld (University of California-Berkeley) Funded by the National Science Foundation. During this project, I participated in the design of a classroom observation scheme and scoring guide while also designing assessments and rubrics to measure student learning across a school year. Each will be used to determine classroom practices that are associated with students' robust understanding of algebra. Additionally, I helped create a conversational guide for teachers to use with a mentor to reflect on observed lessons. I have piloted the use of the conversation guide and am currently analyzing the results to inform	2012- 2014

edits.

Dissertation.

2011-
2013

Supporting Students' Written and Oral Arguments.

This study seeks to identify instructional moves that support low-tracked, Algebra 1 students in their production of convincing arguments in both whole-class settings and in their individual written work. Preliminary findings suggest instruction that supported student arguments was three-fold, consisting of a mathematical element, a teleological element, and a communicational element.

Research Assistant.

2009-
2012

Algebra Teaching Study. Principal Investigator: Dr. Robert Floden
Funded by the National Science Foundation

This project seeks to create an observational tool that captures instructional moves promoting students' robust understanding of Algebra 1 as students engage in solving and making sense of word problems. To measure student understanding, we have developed assessments and rubrics to capture students' robust algebraic understanding, and are creating and analyzing different methods of scoring student work to evaluate student growth at the class level. We explored how we can link measures of student growth to our observational scheme to provide empirical evidence of best practices.

Research Assistant.

2009-
2011

Middle School Proof Analysis. Principal Investigator: Dr. Kristen Bieda
Analyzed student evaluations of proofs given in 4 different domains: geometry, number sense, data, and algebra. We studied the reasons given for students' choice of the most convincing response given two choices of arguments (empirical and general). These responses were considered on the basis of similarities and differences between the two arguments as well as suggestions to improve the argument that was not chosen. Written results have been accepted at *Mathematics Teaching in the Middle School* and are under review at *School Science and Mathematics*.

Practicum Research.

2009-
2010

Understanding Students' Understanding of Fractions.

Eight 5th grade students participated in task-based interviews to assess their understanding of fractions as numbers. Results indicate students have a working knowledge of fractions, but do not conceptualize them as a number.

- Research Assistant.** 2009
Connected Mathematics Project. Principal Investigators: Dr. Glenda Lappan and Elizabeth Phillips
 Analyzed the objectives of Connected Math Project (CMP), studying learning trajectories in problem activities within and across investigations and units.
- Research Assistant.** 2008-2009
Discourse Analysis. Principal Investigator: Dr. Beth Herbel-Eisenmann
 Participated in several projects including: editing a book to be published by NCTM, analysis of transcripts, peer reviewer for JRME.

TEACHING EXPERIENCE

- Seattle Pacific University, Seattle, WA 2015-present
M1560: Numerical Reasoning
M3562: Geometric Reasoning
EDMA3000: Methods for Teaching Mathematics
- University of Central Arkansas, Conway, AR 2013-2015
M1580: Algebra and Trigonometry
M3351: Number Systems for Elementary Teachers
M4335: Advanced Concepts for Middle School Teachers
- Michigan State University, East Lansing, MI 2009-2010
TE 401/402: Teaching Subject Matter to Diverse Learners (Elementary Mathematics)
- Hammondsport Central Schools, Hammondsport, NY. 2006-2007
Fall Semester: Long-term substitute for 8th grade Science
Spring Semester: Long-term substitute for Spanish I, II
- Mark Morris High School, Longview, WA. 2004-2006
Taught Pre-Algebra, Algebra, Geometry, Pre-Calculus
- Lewiston-Altura High School, Lewiston, MN. 1996-2002
Taught all classes from 7th grade Math to AP Calculus

PUBLICATIONS/WRITINGS

- Lepak, J. (in progress). Prospective teachers development of procedural fluency with fractions. *Journal of Mathematics Teacher Educators*.
- Lepak, J., & Wernet, J (in progress). Measuring Students' Robust Understanding Algebra for Word Problems. To be submitted to *Journal for Research in Mathematics Education*.
- Bieda, K., & Lepak, J. (2014). Are you convinced? Middle-grade students' evaluations of mathematical arguments. *School Science and Mathematics, 114*(4), 166-177.
- Lepak, J. (2014). Enhancing students' written mathematical arguments. *Mathematics Teaching in the Middle School, 20*(4), 212-219.
- Bieda, K., & Lepak, J. (2012). Examples as tools for constructing justifications. *Mathematics Teaching in the Middle School, 17*(9), 520-523.

CONFERENCE PRESENTATIONS

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| <p><i>"Towards a robust understanding of algebra: Using an algebra-specific conversation guide to prompt reflection on instruction.</i> Presentation at the annual meeting of the Association of Mathematics Teacher Educators, Irvine, CA.</p> | 2014 |
| <p><i>"Robust Understanding of Algebra: A Framework for Capturing Student Learning and Instructional Practices"</i>
Presented results of student how we operationalized and measured change in students understanding after a year of algebra instruction using rubrics that were developed to capture students understanding of algebra. Presented at AERA, San Francisco, CA.</p> | 2013 |
| <p><i>"Algebraic Explanations: Linking Instruction to Students' Justifications"</i>
Presented rubrics from our classroom observation scheme along with rubrics used to score student explanations to illustrate the capabilities of our evolving tools. Presented at the NCTM Research Presession, Philadelphia, PA.</p> | 2012 |
| <p><i>"Capturing Classroom Practices"</i>
Presented initial findings from the ATS project at working session. Presented at the NCTM Research Presession, Indianapolis, IN.</p> | 2011 |

<p><i>“Assessing What Counts”</i> Presented at symposium of the Annual AERA conference, New Orleans, LA</p>	2011
<p><i>“Tracing Pedagogical Moves in Algebra through Student Solution Strategies”</i> Presented at symposium at AMTE annual conference, Irvine, CA.</p>	2011
<p><i>“The algebra teaching study: Classroom practices that lead to robust understanding”</i> Presented at a poster session PME-NA, Columbus, OH.</p>	2010
<p><i>“Students’ use of givens when proving: Context matters”</i> Presented paper during a working session at NCTM Research Pre-session, San Diego, CA</p>	2010

SCHOLARSHIPS/AWARDS

STaR Fellowship	2014
Dissertation Completion Fellowship: \$6000, College of Education, Michigan State University	2011
CSMC Fellowship: \$5,000/year	2008-2011

PROFESSIONAL ACTIVITIES

Member, Mathematics Education Committee, UCA

Member, Curriculum Committee, UCA

Reviewer, School Science and Mathematics, current

Reviewer, PME-NA 2012 conference proposals

Practicum Committee member, Heather Bosman, Spring 2012 to present

Reviewer, *Mathematics Teaching in the Middle School*, Spring, 2011 to present

NCTM, student member 2009-present

PME-NA, student member 2009-present

AMTE, student member 2009-2011