**MINSUNG KWON**
Assistant Professor
California State University-Northridge

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## EDUCATION

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|---|---|---|
| Ph.D. | 2015 | Mathematics Education<br>School of Education, University of Michigan<br>• Dissertation Title: Supporting Students to Develop Mathematical Explanation: Studying the Work of Teaching<br>• Dissertation Committee: Hyman Bass (co-chair), Mark Hoover (co-chair), Deborah Loewenberg Ball, and Kevin Miller |
| Graduate Certificate | 2011 | Survey Methodology<br>Program of Survey Methodology, University of Michigan |
| M.A. | 2010 | Research Methods<br>School of Education, University of Michigan |
| M.E. | 2005 | Elementary Mathematics Education<br>Korea National University of Education, Republic of Korea<br>• Thesis Title: An Analysis of Teacher-Students Interactions in Korean Elementary Mathematics Classrooms<br>• Thesis Advisor: JeongSuk Pang |
| B.E. | 2000 | Elementary Mathematics Education<br>Daegu National University of Education, Republic of Korea<br>• Top student in the department (Top 2.8% of the University)<br>• First place at the national teacher employment test in Daegu |

## PROFESSIONAL EXPERIENCE

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| 2017- | Assistant Professor, Department of Elementary Education, College of Education, California State University-Northridge |
| 2015-2017 | Postdoctoral research fellow, School of Education, University of Michigan |
| 2007-2015 | Graduate Student Research Assistant, School of Education, University of Michigan |
| 2006-2007 | Lecturer, Daegu National University of Education, Daegu, Republic of Korea |
| 2000-2007 | Elementary school teacher (Grades 1-6), Daegu, Republic of Korea |

## CERTIFICATION

### Teaching Certification

2014 Teaching Certificate, State of New Jersey
- Endorsement: Elementary K-6

2014 Teaching Certificate, State of Michigan
- Endorsement: Elementary K-5; Mathematics (EX) 6-8

2005 Certificate of elementary school teacher, Republic of Korea
- Type of certificate: The first class

2000 Certificate of elementary school teacher, Republic of Korea
- Type of certificate: The second class

**Other Certification**

2014 Mathematics Quality of Instruction (MQI) Certification, The National Center for Teacher Effectiveness at Harvard University

## PUBLICATIONS

*Peer-Reviewed Journal Articles*

**Kwon, M.**, Thames, M. H., & Pang, J. (2012). To change or not to change: Adapting Mathematical Knowledge for Teaching (MKT) measures for use in Korea. *ZDM—The International Journal on Mathematics Education, 44*(3), 371-385.

*Conference Proceedings*

**Kwon, M**. & Hoover, M. (2016). Isolating key components of instruction as a basis for studying teaching. *Proceedings of the 13th International Congress on Mathematical Education (ICME 13)*. Hamburg, Germany.

**Kwon, M**. (2015). Supporting students' development of mathematical explanation: A case of explaining a definition of fraction. *Proceedings of the Ninth Congress of the European Society for Research in Mathematics Education*, Prague, Czech Republic. (pp.3058-3064)

**Kwon, M.** (2012). Mathematical knowledge for teaching in the different phases of teaching profession. Topic Study Group 23, *Proceedings of the 12th International Congress on Mathematical Education*, Seoul, South Korea. (pp. 4655-4662)

**Kwon, M.**, & Thames, M. H. (2012). Same departure and same destination, but different routes: The work of teaching to help students develop mathematical explanations across four years of teaching. Topic Study Group 21, *Proceedings of the 12th International Congress on Mathematical Education*, Seoul, South Korea. (pp. 4185-4194)

*Books (Translated)*

Pang, J., & **Kwon, M.** (2016). *Teaching Problems and Problems of Teaching* by Magdalene Lampert, 2001. Translation in Korean.

## PRESENTATIONS

**Kwon, M.** (2017). Using research in education as the basis for decompositions of teaching practice. Paper will be presented at the 2017 Annual Meeting of the American Educational Research Association (AERA), San Antonio, TX.

**Kwon, M.** (2017). Tailoring instructional supports to the demand of mathematical tasks. Paper will be presented at the 2017 Annual Meeting of the American Educational Research Association (AERA), San Antonio, TX.

**Kwon, M.** (2016). *Basis for the decomposition of teaching practices: Beyond specifying its granularity*. Paper presented at the 8th YERME Summer School, Poděbrady, Czech Republic.

**Kwon, M.**, & Hoover, M. (2016). *Isolating key components of instruction as a basis for studying teaching*. Paper presented at the 13th International Congress on Mathematical Education, Hamburg, Germany.

Hoover, M., **Kwon, M**., & Ball, D. L. (2016). *Developing method for studying the work of teaching*. Paper presented at the 13th International Congress on Mathematical Education, Hamburg, Germany.

**Kwon, M.** (2016). *The role of selecting and sequencing answers on supporting the collective construction of mathematical explanation*. Paper presented at Conversations Among Colleagues Michigan AMTE, Kalamazoo, Michigan.

**Kwon, M.** (2015). *Supporting students' development of mathematical explanation: A case of the brown rectangle problem*. Paper presented at the 9th Congress of European Research in Mathematics Education, Prague, Czech Republic.

**Kwon, M.**, & Hoover, M. (2015). *Studying the work of leading a mathematics discussion: Establishing mathematical richness*. Paper presented at the 2015 Annual Association of Mathematics Teacher Educators Conference, Orlando, Florida

**Kwon, M.** (2012). *Mathematical Knowledge for Teaching (MKT) in the different phases of teaching profession*. Paper presented at the 12th International Congress on Mathematical Education, Seoul, South Korea.

**Kwon, M.**, & Thames, M. H. (2012). *Same departure and same destination, but different routes: The work of teaching to help students develop mathematical explanation across four years of teaching*. Paper presented at the 12th International Congress on Mathematical Education, Seoul, South Korea.

**Kwon, M.**, Ng, D., & Mosvold, R. (2011). *Sequence and strategies for comparing and ordering fractions in Indonesian, Korean, Norwegian, and U.S. mathematic textbooks*. Poster presented at the annual meeting of the American Educational Research Association, New Orleans, LO.

Ng, D., & **Kwon, M.** (2011). *Strategies and invalid reasoning entailed in examples for comparing fractions*. Poster presented at the research presession of National Council of Teachers of Mathematics, Indianapolis, IN.

Shaughnessy, M., Ball, D., Bass, H., Kim, Y., Lai, Y., Sleep, L., **Kwon, M.**, & Thames, M. (2011). *Learning to do mathematics as a teacher*. Paper presented at the work session in the research presession National Council of Teachers of Mathematics, Indianapolis, IN.

Thames, M., Ball, D., **Kwon, M.**, & Jacobson, E. (2011). *Examining content knowledge close to the practice of teaching by reviewing assessment items*. Paper presented at the research pressession of National Council of Teachers of Mathematics, Indianapolis, IN.

**Kwon, M.**, Cole, Y., & Delaney, S. (2009). *Relative item difficulties of MKT measures in the U.S., Ireland, Ghana, and Korea*. Paper presented at the 33rd Conference of the International Group for the Psychology of Mathematics Education, Thessaloniki: Greece.

Ball, D. L., Charalambous, C., Lewis, J., Thames, M., Bass, H., Cole, Y., **Kwon, M.**, & Kim, Y. (2009). *Mathematical knowledge for teaching: Focusing on the work of teaching and its demands*. Paper presented at the 33rd Conference of the International Group for the Psychology of Mathematics Education, Thessaloniki, Greece.

**Kwon, M.** (2009). *Validating the adapted MKT measures in Korea*. Paper presented at the symposium in the annual meeting of the American Educational Research Association, San Diego, CA.

**Kwon, M.** (2006). *An analysis framework for observation of mathematics instructions*. Invited lecture for educational leaders to reform teaching and learning methods, Duksung Women's University, Seoul, Republic of Korea.

**Kwon, M.**, Pang, J., & Lee, K.. (2005). *An analysis of teacher-students interactions in Korean elementary mathematics classrooms*. Paper presented at the 29th Conference of the International Group for the Psychology of Mathematics Education, Melbourne, Australia.

Pang, J., Kim, S., & **Kwon, M.** (2004). *Development of mathematics lesson plans using ICT by prospective elementary school teachers*. Poster presented at the 28th Conference of the International Group for the Psychology of Mathematics Education, Bergen, Norway.

## TEACHING EXPERIENCE

**Inservice Teachers**

2016 Math coaching for K-8 teachers, Litchfield School, MI.

**College Level**

2016 Teaching assistant for *Teaching Children Mathematics* (EDUC411), School of Education, University of Michigan
Teaching assistant for *Research in Educational Practice* (EDUC659), School of Education, University of Michigan

2008 Graduate apprenticeship for *Workshop on Teaching Mathematics* (EDUC 518), School of Education, University of Michigan

2007 Graduate apprenticeship for Mathematics Methods Planning Group (MMPG), School of Education, University of Michigan
Graduate apprenticeship for field-instruction, School of Education, University of Michigan

2006-2007 Lecturer, Daegu National University of Education, Daegu, Republic of Korea
- Teaching Mathematics I (Theory): Four sections
- Teaching Mathematics II (Practice): Seven sections

**K-12 Level**

2016 *Wolverine Pathways* math circle volunteer, Grades 8 and 11, Ypsilanti and Southfield, MI
http://wolverinepathways.umich.edu/

2014-2015 *Mathcounts* volunteer, Grades 6-8, Forsythe Middle School, Ann Arbor, MI
http://www.a2indy.com/2015/02/08/mathcounts-invigorates-math-learning-for-area-middle-schoolers/

2006-2007 Elementary school teacher, Daegu Oksan Elementary School, Daegu, Republic of Korea

2000-2005 Elementary school teacher, Daegu Chilsung Elementary School, Daegu, Republic of Korea

2005 Instructor, Center for Gifted Students in Mathematics, Daegu Seobu Local Office of Education, Daegu, Republic of Korea
Instructor, Center for Gifted Students in Mathematics, Daegu National University of Education, Daegu, Republic of Korea

2003-2004 Instructor, Mathematics Camp for Creativity, The Society of School Mathematics, Republic of Korea

2002-2003 Instructor, Center for Gifted Students in Mathematics, Daegu National University of Education, Daegu, Republic of Korea

## RESEARCH EXPERIENCE

2015-2017 Postdoctoral research fellow, School of Education, University of Michigan
Building MKT Assessment Items and Instructional Tasks to Build Intercommunity Capacity to Develop Teachers' MKT. National Science Foundation, $2,997,000.
Principal investigators: Mark Hoover, Deborah Ball, and Hyman Bass
http://sites.soe.umich.edu/mkt/

2016-2017 Visiting postdoctoral research fellow, Institute of Survey Research, University of Michigan
Empirical Assessment of Respondent Driven Sampling from Total Survey Error Perspectives. National Science Foundation, $549,999.
Principal Investigator: Sunghee Lee
https://sites.lsa.umich.edu/korean-healthlife-study/

2010-2015 Graduate student research assistant, School of Education, University of Michigan
Contextual Research and Large Empirical Research — Developing the theory of mathematical knowledge for teaching by investigating its nature, measurement, and growth. National Science Foundation, $2,700,000
Principal investigators: Mark Hoover Thames, Deborah. Ball, Laurie Sleep, and Hyman Bass.

2013-2014 Graduate student research assistant, School of Education, University of Michigan
Making Room for Student Thinking: Using Automated Feedback, Video-Based Professional Development, and Evidence-Based Practice Recommendations To Improve Mathematical Discussions. DOE: Institute for Education Sciences, $1,440,000.
Principal investigators: Kevin Miller, Kai Cortina, Mark Hoover Thames, and Vilma Mesa.

2012 Graduate student research assistant, TeachingWorks, University of Michigan
MET-X Video-tagging project. Bill & Melinda Gates Foundation.
Principal Investigator: Deborah Ball

2010-2011 The Secondary Mathematical Laboratory. The National Center for Institutional Diversity, $43,000
Fiscal agent: Robert Moses, Deborah Ball, and Mark Hoover Thames

2010 Graduate student research assistant, School of Education, University of Michigan

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| | The Algebra (Cohort) Project in Michigan: A Subcontract to the Algebra Project's "R&D: The Development of Student Cohorts for the Enhancement of Mathematical Literacy in Under Served Populations." National Science Foundation, $500,000.<br>Principal Investigators: Mark Hoover Thames and Laura Roop. |
| 2009-2010 | Measuring Knowledge for Teacher Effectiveness. Gates Foundation, $750,000<br>Principal investigators: Geoffrey Phelps and Mark Hoover Thames<br>http://onlinelibrary.wiley.com/doi/10.1002/ets2.12031/full |
| 2008-2009 | Graduate student research assistant, School of Education, University of Michigan<br>Developing Modules for the Preparation of Elementary Mathematics Specialists (Module 1: Representing and Comparing Fractions in Elementary Mathematics Teaching). Cisco Learning Institute.<br>Principal Investigators: Timothy Boerst, Kara Suzuka, and Hyman Bass |

## AWARDS AND FELLOWSHIPS

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| 2009-2015 | Rackham Conference Travel Grant, University of Michigan |
| 2014 | Rackham Dissertation One-Term Finishing Grant, University of Michigan |
| 2014 | Rackham Graduate Student Research Grant, University of Michigan |
| 2008 | Rackham Graduate Student Research Grant, University of Michigan |
| 2007 | Mathematics instruction research award for contributing to improve teaching methods, Superintendent of Daegu Seobu Local Office of Education, Republic of Korea |
| 2005 | Superintendent citation for contributing to creativity education, Superintendent of Daegu Seobu Local Office of Education, Republic of Korea |
| 2003-2004 | Stipend and tuition waiver for study leave for master's degree, Daegu Metropolitan Office of Education, Republic of Korea |
| 2002 | Superintendent citation for contributing to the improvement of education, Superintendent of Daegu Metropolitan Office of Education, South Korea |
| 2001 | Action research award, Elementary education, Superintendent of Daegu Metropolitan Office of Education, Republic of Korea |
| 1996-2000 | Four-year full fellowship, Daegu National University of Education, Republic of Korea |

## PROFESSIONAL TRAININGS

*Professional Development Program*

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| 2013 | Teaching mathematical practices, Elementary Mathematics Laboratory (EML), University of Michigan. |
| 2009 | Mathematical discussion, Elementary Mathematics Laboratory (EML), University of Michigan. |
| 2008 | Mathematics Knowledge for Teaching Teachers, Elementary Mathematics Laboratory (EML), University of Michigan. |

*Other trainings*

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| 2016 | Item Response Theory: Methods for the analysis of discrete survey response data. ICPSR Summer program in quantitative methods of social research, University of Michigan |
| 2013 | Qualitative data analysis with and without computer (survmeth654: 1.5 credit course), Institute of Survey Research Summer Institution, University of Michigan |
| 2013 | Advanced questionnaire design (survmeth998: 1credit course), Institute of Survey Research Summer Institution, University of Michigan |
| 2013 | Approved item reviewer for Illustrative Mathematics (Classroom focus) |
| 2011 | Telephone interview survey facility, Institute of Survey Research, University of Michigan |
| 2002 | Information-oriented education: Educational Utility of Internet (60 hours), Seoul National University, Republic of Korea |

2002 Teaching Gifted Students in Mathematics: Advanced course (90 hours), Daegu National University of Education, Republic of Korea

2001 Teaching Gifted Students in Mathematics: Introductory course (90 hours), Daegu National University of Education, Republic of Korea

2001 Teaching Statistics (60 hours), National Institute of Professional Administration, Republic of Korea

2001 Information-oriented education: Animation B (60 hours), Korea National University of Education, Republic of Korea

## PROFESSIONAL ACTIVITIES

*Reviewers*

2017 Reviewer for conference proposals: *AERA* Division K

2016 Reviewer for journal manuscripts:
*Educational Studies in Mathematics*; *Journal of Korea Society Educational Studies in Mathematics*
Reviewer for conference proposals:
*AMTE; AERA* Division K and SIGRME*; ETC3: Mathematics Teaching, Resources, and Teacher Professional Development; YERME Summer School*

2015 Reviewer for journal manuscript:
*The Mathematical Enthusiasts*
Reviewer for conference proposals*:*
*NCTM Research Conference; ICME13* TSG52 (Empirical Methods and Methodologies)

2014 Reviewer for conference proposals:
*Ninth Congress of European Research in Mathematics Education (CERME9)* TWG19 (Mathematics teaching practices and resources for teaching); *AERA* Division C (Mathematics) and Division K (Professional development)

2013 Reviewer for conference proposals:
*AERA* Division K (Professional development)

2012 Reviewer for book chapters:
*Mathematics Curriculum in School Education: Advances in Mathematics Education,* edited by Y. Li and G. Lappan

2011 Reviewer for journal manuscript:
*ZDM—The International Journal on Mathematics Education.*

*Other service*

2016 Planning committee for TeMaCC (Teaching Mathematics Content Courses) Conference

2015-2017 Communication committee for Michigan AMTE