

Juanita M. Silva

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Academic Background

- B.S. 2008 THE UNIVERSITY OF TEXAS- AUSTIN, Austin, TX Mathematics;
Emphasis in Math Education
- Ph.D. 2013 to Present THE UNIVERSITY OF TEXAS- AUSTIN, Austin, TX Mathematics;
STEM Education Doctoral Program; Emphasis Math Education

Professional Experience

- 01/17 to present **Consultant, Dr. Jessica Hunt (Principal Investigator to FAACT project).**
- Assist with the implementation of research relating to instructional trajectories for students with a learning disability in mathematics. Analyze and design videotaped tutoring sessions focused on concepts of unit and non-unit fractions and beginning operations with rational numbers. Conduct qualitative and quantitative research pertaining to student's understanding of fractional quantities. North Carolina State University, NC.
- 8/15 to present **Assistant Instructor, Elementary Math Methods Course, Department of Curriculum and Instruction.**
- Provide undergraduate teacher preparation in the areas of mathematics thinking and learning and instructional methods. Design, implement, and analyze math lessons focused on children's mathematical thinking. Use current research practices to help introduce content, motivate and learning strategies to help preservice teachers engage in practices that increase math learning in elementary grades. The University of Texas at Austin, Austin, TX
- 9/17 to present **Teaching Assistant, Introduction to Real Analysis Course, Department of Mathematics**
- Assist in teaching and grading Real Analysis content. Incorporate constructivist approaches such as Inquiry Based Learning in math undergraduate classrooms. Assist and provide formative feedback to undergrad students to help with their mathematical learning and understanding of proofs. Content in Real Analysis includes sets, the Real Number line, inequalities, sequences, limits, continuity,

differentiability, and integration. The University of Texas at Austin, Austin, TX.

9/14 to 8/16 **Graduate Research Assistant, Dr. Jessica Hunt (Principal Investigator to FAACT project).**

Assist with the implementation of research relating to instructional trajectories for students with a learning disability in mathematics. Analyze, implement and document videotaped tutoring sessions focused on concepts of unit and non-unit fractions and beginning operations with rational numbers. Conduct qualitative and quantitative research pertaining to student's understanding of fractional quantities. The University of Texas at Austin, Austin, TX.

01/13 to 08/14 **Teaching Assistant, Classroom Interactions course for the Uteach Program.**

Develop, conduct, and revise inquiry lessons, projects, and web-based assignments for pre-service teachers. Incorporate constructivist approaches in math undergraduate classrooms. Observe lessons and provide formative feedback to preservice teachers to help improve the quality of their mathematical teaching in Algebra, Geometry, and Calculus subjects. The University of Texas at Austin, Austin, TX.

08/08 to 06/13 **Middle School Teacher, 8th and Algebra 1 subjects.**

Provide middle school students with 8th grade and Algebra 1 content preparation. Develop, design, implement, and revised constructivist lesson plans to support students in conceptual understanding of the mathematics. Other responsibilities included attending IEP meetings, directing a small group for tutoring sessions (both in English and Spanish), collaborating with parents, and mentoring first year math teachers. Thomas C. Marsh Middle School, Dallas Independent School District, Dallas TX

05/10 to 05/12 **Test Writer, Mathematics Department for the Dallas district.**

Created and developed secondary mathematics content for test benchmark exams. Used previous test banks and statistical analyzes to determine the best use of test questions and the creation of question distractors. Introduced and adapted open-ended questions to allow students to explain their thinking and obtain partial credit for district exams. Dallas Independent School District, Dallas TX

08/10 to 08/12 **Math Department Head, Thomas C. Marsh Middle School (6-8) math teachers.**

Created, implemented, and revised professional development for the math department at the middle school level. Attended instructional leadership meetings to assist in math instruction for in-service teachers. Collaborated daily with a group of in-service teachers to devise ways to help improve mathematics learning for all students at our campus. Visited classrooms, offered resources, and had teachers do class observations of successfully proven instructional

practices performed by our fellow teachers. Dallas Independent School District, Dallas TX

Math Improvement Projects

05/10 to 05/11 **LIT instructor, Thomas C. Marsh Middle School.**

Volunteered to create math content for a Lock in Thought computer software program designed to help improve mathematics learning for all middle school students

08/12 to 06/13 **College Advisor and Instructor, The Road Map to College Program.**

Created, implemented, and advised first generation middle school students on college preparation. The primary roles included, teaching interview techniques, resume and personal statement writing advice, designed a trip, raised funds, and chaperoned a group of middle school students to five major universities in Texas. Thomas C. Marsh Middle School, Dallas Independent School District, Dallas TX

08/11 to 06/13 **MET teacher, Measure of Effective Teachers Program funded by the Bill Gates Foundation.**

Designed, implemented, and videotape Algebra 1 and math courses for the MET program. Reviewed taught lessons and implemented surveys to all participating students. Thomas C. Marsh Middle School, Dallas Independent School District, Dallas TX

Publications

Hunt, J.H., **Silva, J.**, Lambert, R. (in preparation). Challenging assumptions of mathematics disability through a re-conceptualist framework: Children's conceptions of fractions.

Hunt, J.H., MacDonald, B., Lambert, R., Sugita, T., **Silva, J.** (under review). Accessing the Conversation: Widening Classroom Discourse Using Universally Designed Talk Moves.

Silva, J., Krause, G., Maldonado, L., (under review). "Explicame tu estrategia": Emerging bilinguals' development of mathematical agency in a teaching experiment.

Hunt, J.H., **Silva, J.** & Lambert, R. (Accepted). From Trajectories, Deficits, and Differences to Neurodiversity: The Case of Jim. Conference Paper: *International Group for the Psychology of Mathematics Education North America.*

Hunt, J., Welch-Ptack, J., **Silva, J.** (2016) Initial understandings of fraction concepts evidenced by students with mathematics learning disabilities and difficulties: A framework. *Learning Disability Quarterly*.

Hunt, J. H., Westenskow, A., **Silva, J.**, Welch-Ptak, J. (2015) Levels of participatory conception of fractional quantity along a purposefully sequenced series of equal sharing tasks: Stu's trajectory. *Journal of Mathematical Behavior*, 41, 45-67.

Hunt, J. H., Westenskow, A., **Silva, J.**, Welch-Ptak, J. (2014) Stu's initial and evolving conceptions of unit fractions. Conference Paper: *International Group for the Psychology of Mathematics Education North America*.

Peer Reviewed Conference Proceedings

Hunt, J.H. & **Silva, J.** (April 2017). *Unit coordination and partitioning activity of one child with mathematics learning disability: A case study*. American Education Research Association, San Antonio, TX.

Hunt, J.H., & **Silva, J.**, & Welch-Ptak, J. (August 2016). *Elementary children with learning disabilities and difficulties: Initial fraction understandings*. Paper presented at the 39th Conference of the International Group for the Psychology of Mathematics Education (PME), Szeged, Hungary.

Hunt, J.H., Welch-Ptak, J., & **Silva, J.** (April 2016). *Initial understanding of fractions: Children with learning disabilities and difficulties*. Paper presented at the National Council of Teachers of Mathematics Research Conference (NCTM-R), San Francisco, CA.

Hunt, J.H., Westenskow, A., **Silva, J.** & Welch-Ptak, J (2015). *Stu's initial and evolving conceptions of unit fractions*. Paper presented at the 37th Conference of the International Group for the Psychology of Mathematics Education North America (PME-NA), East Lansing, MI.

Conference Presentations

Hunt, J.H. & **Silva, J.** (2017). *Unit coordination and partitioning activity of one child with mathematics learning disability: A case study*. American Education Research Association, San Antonio, TX.

Hunt, J.H., **Silva, J.**, & Welch-Ptak, J. (2016). *Initial understanding of fractions: Children with learning disabilities and difficulties*. National Council of Teachers of Mathematics, San Francisco, CA.

Hunt, J.H., **Silva, J.**, & Welch-Ptak, J. (2016). *Trajectories of fractions quantities: Students with learning disabilities and difficulties*. Research pre-session, National Council of Teachers of Mathematics, San Francisco, CA.