

Sandra Miles
Curriculum Vitae

Email: Sandra.miles@usu.edu

Phone (208) 357-6428

Education

PhD in Education, Utah State University (May 2024)
Specialization: Curriculum & Instruction
Concentration: Mathematics Education and Leadership

M.Ed. in Elementary Education, Utah State University July 2020
Specialization: Curriculum & Instruction
Elementary Mathematics Education

BA in Secondary Education: Brigham Young University - Provo August 2003
Certification in Secondary Mathematics Education

Additional graduate level math classes taken at **Utah State University (7 credits)**
Math 5210 – Intro to Analysis Fall 2021
Math 6910 – Modern Research in Math/Statistics Fall 2021
Math 5810 – Intro to Probability Spring 2023

Licenses and Certificates

Utah professional teaching license – Secondary education with a math level 4 secondary math endorsement. Expires 6/30/2028.

Professional Experience

Graduate Teaching & Research Assistant – Utah State University 2020 – present
School of Teacher Education and Leadership
Teach online and face-to-face classes in mathematics content and pedagogy for preservice K-8 teachers in the School of Teacher Education and Leadership.
Conduct research with university faculty on the development of student self-efficacy and identity in STEM fields.
Supervise pre-service teachers during field experiences: Conduct observations and provide feedback and support.

Adjunct math instructor –Brigham Young University- Idaho 2013-2016, 2017-2020
Department of Mathematics
Taught a quantitative reasoning course and participated in faculty collaboration related to course improvement.

Math Teacher –Madison Junior High (Rexburg, ID) 2016 - 2017
Taught Algebra I to 7th, 8th, and 9th graders
Created accelerated curriculum for advanced students, allowing them to complete two years of math in one.

Substitute Teacher – Madison School District (Rexburg, ID) 2015-2016, 2017-2019

Worked in classrooms from 2nd – 12th grade. Served as an emergency long term substitute for math teachers at the high school which required me to write lesson plans, grade assignments and assessments, and provide tutoring and feedback to students.

Family Teacher –Community Living Opportunities (Lawrence, KS) 2003 - 2013
Managed a group home for adults with developmental disabilities

Student Teacher – South Jordan Middle School (South Jordan, Utah) 2002 - 2003
Taught Algebra and Pre-Algebra to 6th, 7th, and 8th graders

Math Lab Tutor –Brigham Young University (Provo, Utah) 2001 - 2002
Tutored university students in math subjects ranging from College Algebra/Trigonometry to Advanced Calculus

Publications

Miles, S. (2023). *Clarifying self-efficacy and self-concept: A mixed methods examination to improve measurement* [Unpublished Manuscript]. Department of Teacher Education and Leadership, Utah State University.

Miles, S. (2022). A science analogy for understanding mathematical structure. *Mathematics Teacher: Learning and Teaching Pre-K–12*, 115(12), 867-873.

Miles, S., Vela, K., (2022). Asking for help is a key to success: The relationship between student help seeking beliefs and mathematics self-efficacy. *School Science and Mathematics Journal*, 122(7), 371-380.

Vela, K., Miles, S. (2022). The Relationship between self-efficacy and interest in a STEM career: A meta-analysis. In A.Z. Macalalag, I. Sahin, J. Johnson, & A. Bicer (Eds.), *Internalization of STEM Education* (pp.159-181). ISTES Organization.

Online Publications

Miles, Sandra J. (2022). *Neutralizing Reactions to Teach Identity and Inverses in Mathematics*. Online lesson plan for 6-8 grade. National Council of Teachers of Mathematics: Illuminations. Online: illuminations.nctm.org.

University Teaching

Utah State University, Logan, Utah (2020 – present)

ELED 4056: Elementary Content Practicum

Students apply instructional strategies in the curriculum areas of mathematics, science, and social studies under the guidance of cooperating classroom teachers and university faculty.

ELED 4061: Teaching Elementary Mathematics I: Rational Numbers, Operations, and Proportional Reasoning

Students develop pedagogical content knowledge in rational number, operations, and proportional reasoning for teaching grades preschool through grade 6. Understanding characteristics of instruction, assessments, and intervention are considered critically.

ELED 4062: Teaching Elementary School Mathematics II: Number, Operations, and Algebraic Reasoning

Students develop pedagogical content knowledge in number, operations, and algebraic reasoning for teaching grades preschool to grade six, including methods for designing and implementing mathematics instruction, assessment, remediation, and intervention.

TEAL 5521: Mathematics for Teaching K-8: Numbers and Operations

Course for prospective teachers that covers the content of numbers and operations to develop a comprehensive understanding of our number system and relate its structure to computation, arithmetic, algebra, and problem-solving.

TEAL 5523: Mathematics for Teaching K-8: Algebraic Reasoning

This course provides prospective teachers a deeper understanding of algebraic expressions, equations, functions, real numbers, and instructional strategies to facilitate the instruction of this content for elementary students.

TEAL 6300 Workshop in Mathematics Education

The course is an exploration of current topics and methods in mathematics education. Topics can include Common Core mathematics content, relevant mathematics in rural settings, and integration of mathematics and children's literature.

TEAL 6551: Mathematics for Teaching K-8: Assessment and Intervention

This course provides practicing teachers a deeper understanding of the various types of assessment and their appropriate use for guiding instruction, intervention and evaluation of student learning.

Brigham Young University - Idaho, Rexburg, Idaho (2013 - 2016, 2017 - 2020)

FDMAT108/Math108X: Math for the Real World

Prepares students to understand, analyze, and solve real-life problems that require quantitative reasoning. Topics include the meaning of probabilities, how to read, critique, and apply basic statistical information; the use of mathematical models in describing, understanding, and making predictions about real world phenomena; and the mathematics of budgeting, loans, and investments.

Awards & Professional Recognition

School Science and Mathematics (SSMA) John Park Student Convention Award. Fall 2022.
(\$290)

Conference Presentations

Miles, S. (2023, October - accepted). *Not everyone is the same: How demographic, contextual, and instructional factors contribute to mathematics identity in various student populations*. [Paper Presentation]. International Conference on Social and Education Sciences (IConSES), Las Vegas, NV, United States.

Miles, S. (2023, April 11). *Creating a positive sense of place: Feelings of safety and autonomy in a refugee camp* [Poster Presentation]. Utah State University Student Research Symposium.

Miles, S. (2023, March 28). *How security and autonomy create a positive sense of place for refugees*. [Poster Presentation]. Utah State University Library Digital Humanities Symposium.

Parslow, M., Miles, S. (2023, March 25). *"The math I used, I learned that it really is used in most of your everyday activities you do."* -An Integrated Math Activity. National Science Teachers Association National Conference, Atlanta, GA, United States.

Vela, K. N., Parslow, M., Miles, S., Weber, D. (2023, January 31). *The beauty of planning a school garden.* Utah Council of Teachers of Mathematics, Provo, UT, United States.

Miles, S. (2022, October 29). *Clarifying constructs to improve research on mathematical confidence.* [Paper Presentation]. School Science and Mathematics Association Annual Convention, Missoula, MT, United States.

Miles, S. & Vela, K. N., (2022, February 24). *Asking for Help as a Key to Success: The Relationship Between Student Help Seeking Skills and Mathematics Self-Efficacy.* [Paper Presentation]. Southwest Educational Research Association Annual Meeting, New Orleans, LA, United States.

Miles, S. (2021, April 15). *What can I do about it? Teacher behaviors that strengthen students' mathematical identities* [Paper Presentation]. Utah State University Student Research Symposium, Virtual Conference.

Vela, K. N., & Miles, S. (2021, February 3-5). *The relationship between self-efficacy and academic achievement or interest in a STEM career: A meta-analysis* [Paper presentation]. Southwest Educational Research Association Annual Meeting, Virtual Conference.

Service

Conference Reviewer

School Science and Mathematics Association (SSMA), Fall, 2022 Convention.

Southwest Educational Research Association (SERA): Division II: Instruction, Learning, and Cognition, 2022 Annual Meeting.

Southwest Educational Research Association (SERA): Division III: Methodology, Measurement and Evaluation, 2022 Annual Meeting.

American Educational Research Association (AERA): Research in Mathematics Education, 2022, 2023, 2024.

Guest Lectures

Utah State University – ELED 2010 Algebraic Thinking and Number Sense for Elementary Education School Teachers (for Jacy Beck) (2022, January)

Utah State University– ELED 4062 Teaching Elementary School Mathematics II: Number, Operations, and Algebraic Reasoning (for Dr. Katherine Vela) (2021, April).

Additional Skills

Foreign Language

Spanish – I have 4+ years of Spanish instruction (approximately conversational)

Russian – I have 2+ years of Russian instruction (beginner)

Statistical Software

R/R Studio

Stata

Professional Affiliations

Member – American Educational Research Association (AERA) 2021 - current

Member – School Science and Mathematics Association (SSMA) 2022 - current
Member – American Mathematical Society (AMA) 2021 - current
Member – National Council of Teachers of Mathematics (NCTM) 2021 - current
Member – Southwestern Educational Research Association (SERA): 2020 - 2022