

J. Matt Switzer
Curriculum Vita
(TCU Format, last revised November 12, 2025)

- **Name:** John Matthew Switzer

- **Contact information**

TCU College of Education
Andrews Institute of Mathematics and Science Education
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- **Academic background**

- a. Education**

Ph.D. (2011)	Curriculum and Instruction, Mathematics Education, University of Missouri
M.A. (2007)	Mathematics with a Teaching Emphasis, University of Northern Colorado
B.S. (1989)	Mathematics Education, Indiana State University

- b. Professional certifications**

Colorado Department of Education, Professional Teaching License, Secondary Mathematics, Expired:
November 2010

- c. Present rank:** Associate Professor

- d. Year of appointment to the University and rank**

2016 – Associate Professor of Mathematics Education
2011 – Assistant Professor of Mathematics Education

- e. Previous teaching and/or research appointments other than TCU**

- i. Full time*

2008 – 2011 Graduate Research Assistant, College of Education, University of Missouri
2007 – 2009 Graduate Teaching Assistant, College of Education, University of Missouri.
2005 – 2007 K-12 Mathematics Curriculum Facilitator, Poudre School District, Curriculum &
Instruction, Ft Collins, Colorado.
2002 – 2005 Mathematics Teacher, Rocky Mountain High School, Fort Collins, CO.
2000 – 2005 Mathematics Teacher, Fort Collins High School, Fort Collins, CO.
1995 – 2000 Mathematics Teacher, Boltz Junior High School, Fort Collins, CO.
1990 – 1994 Mathematics Teacher, Santa Fe Springs High School, Santa Fe Springs, CA.

- f. Formal continuing education associated with professional development**

- **Covidence Systematic Review Tool** (Spring 2025). Read and watched tutorial videos from Covidence.org for getting started with setting up a systematic review with Covidence. April 16, 2025, met with Michelle Whitehead, TCU Nursing & Nurse Anesthesia Librarian, to discuss, ask questions, and receive suggestions on the structure of our systematic review in Covidence.
- **Koehler Center Teacher Observation** (September 26, 2024)
- **Pedagogy Roundtable: Insights from the Generative AI Classroom (Adventures in Teaching & Learning)**. Presented by TCU Center for Digital Expression (March 31, 2023).

- **JRME Talks** with Janet Walkoe, Caro Williams-Pierce, and Margaret Walton about "Professional Development to support multimodal teacher noticing" and a preview of their article forthcoming in our July 2023 issue March 6, 2023.
- **Second Annual Pre-conference to 2023 AMTE Annual Conference: Transforming Secondary Mathematics Teacher Preparation** February 1, 2023
- **Designing Digital Assignments Workshop** Fall 2022
- **Get the Facts Out Webinar** Fall 2022
- **Interrupting Microaggressions** - April 23, 2021
- **Koehler Center Hybrid Course Certification** (Summer 2020)
- **Koehler Center TCU Online Course Certification** (Summer 2020)
- **"Studiocode University Professional Development"** – A set of online professional development courses for users of Studiocode, a qualitative research software (September 2015 – present)
- **"Using Multimedia in Teacher Education: Innovative Pedagogies from Doing What Works Implementation Awardees"** – A webinar conducted by the American Association of Colleges for Teacher Education (May 21, 2014).
- **"Using a Networked Improvement Community to Transform Secondary Mathematics Teacher Preparation"** – A webinar conducted by the Association of Mathematics Teacher Educators, September 15, 2014.
- **"CSMC 3rd International Conference: Mathematics Curriculum Development, Delivery, and Enactment in a Digital World"** – A conference hosted by the Center for the Study of Mathematics Curriculum (CSMC) on the current and future direction of digital mathematics education curriculum. University of Chicago, November 7-9, 2014.
- **"Publish and Flourish"** – A research-based workshop on academic writing. Texas Christian University (November 9, 2012)

- **Teaching**

- a. **Courses Taught**

- i. *Texas Christian University* (* indicates new courses designed, ** indicates revised for synchronous online modality)

Undergraduate

EDEC 30023	Critical Thinking: Mathematics I (Fall 2011 – 2025) **
EDEC 30203	Critical Thinking: Mathematics II (Spring 2012 – 2024) **
EDMS/SE 50023	Effective Teaching and Classroom Implementation (Fall & Spring 2011 – 2013)
EDMS 40443	Methods Teaching Middle Math I (Fall 2013 – present)
EDSE 50443	Secondary Math Methods I (Fall 2013 – present)
EDMS 40473	Middle School Methods II (Spring 2014 – present)*
EDSE 50453	Secondary Mathematics Methods II (Spring 2014 – present)**
EDUC 40003	Honors Research Paper (Fall 2015)
EDMS/SE 50663	Motivating and Managing (Fall 2018 – 2019)
EDSP 55663	Motivating and Managing (Fall 2018 – 2019)
EDMS/SE 41151	Field Experience in Education (Spring 2020, Spring 2022)**
EDUC 20043*	Mathematics for Teachers of Early Childhood through 8 th Grade (Fall 2020** - present)
EDMS 50553	Methods Teaching Middle Science (Spring 2022 – present)
EDSE 50553	Methods for Teaching Secondary Science fff(Spring 2022 – present)

Graduate

EDMT 50113*	Teaching Data Analysis and Probability (Spring 2013, 2015, 2017, 2019, 2021** ,2023)
EDMT 60113*	Teaching Algebraic Thinking (Spring 2012, 2014, 2016, 2018, 2020** , 2022)
EDMT 60143*	Teaching Mathematics with Technology (Summer 2017, 2019** , 2021, 2023)

EDSP 58003*	Learning Differences: Math (Fall 2012, Fall 2013)
EDUC 60513	Practicum in Education (Spring 2013, Spring 2014, Fall 2016)
EDUC 70903	Treatise in Mathematics Education (2017 – 2023)
EDMT 70980	Thesis in Mathematics Education (2013 – 2023)
EDMS/SE50663	Motivating and Managing (Fall 2018 – 2020)
EDSP55663	Motivating and Managing (Fall 2018 – 2020)

ii. *University of Missouri*

Undergraduate

TDP 4370 Teaching and Modeling Middle School Mathematics
TDP 4310 Learning and Teaching Geometry in the Elementary School

Graduate

C&I 8900 Advanced Mathematics Pedagogy for K-6 Teachers

b. Honors projects directed, or committee service

Jordan MacAskill, *Differences in mathematical instruction for ESL/ELL and two-way immersion programs* (Committee Chair) Fall 2015-Spring 2016

Sarah Clements, *Math anxiety in pre-service elementary school teachers and its effects on perceived ability to teach mathematics* (Committee Member) Fall 2015-Spring 2016

c. Graduate theses (recitals) and dissertations directed, or committee service

i. *Treatise*

• *In progress*

- Bermea, Dianna, C&I Traditional Master's with specialization in Mathematics Education, *Building Ambitious Teaching Practices with Number Talks* (Committee Member). In progress.
- Peek, Misty, C&I Traditional Master's with specialization in Mathematics Education, *Supporting the Pedagogical Knowledge of Teachers Who Are Servicing Emergent Bilingual Students in a General Education Setting for Mathematics and Science Instruction*. (Committee Member). In progress.
- Cunningham, Ronnie, C&I Traditional Master's with specialization in Mathematics Education, (Committee Member). In progress.
- Fayyad, Caren, C&I Traditional Master's with specialization in Mathematics Education, (Committee Member). In progress

• *Completed*

- Omopariola, Taiwo, C&I Traditional Master's with specialization in Mathematics Education, *Aligning Mathematics State Standards, Focal Points, and Big Ideas* (Committee Member). Spring 2025.
- Padilla, Camila, C&I Traditional Master's with specialization in Mathematics Education, *Building Early Algebra Skills Through Number Talks* (Committee Member). Spring 2025.
- Wunneburger, Anne, C&I Traditional Master's with specialization in Mathematics Education, *Professional Learning Communities and Vertical Alignment in Mathematics: Fostering Teacher Collaboration for Student Success* (Committee Member). Spring 2025.
- Nantz, Mason (April 2024) C&I Traditional Master's with specialization in Mathematics Education. *Finding Fact Fluency* (Committee Chair). Spring 2024.
- Kathryn Tanzenberg, C&I Accelerated Master's with specialization in Mathematics Education. *Place value and the power of ten*. (Committee Chair). Spring, 2021.

- Emily Emerson, C&I Accelerated Master's with specialization in Mathematics Education. *Aspects that shape and influence vulnerability in the mathematics classroom* (Committee Chair). Spring, 2021.
- Isabel Cantu, C&I Accelerated Master's with specialization in Mathematics Education. *Mathematical discourse in the classroom*. (Committee Member). Spring, 2021
- Vaden Ellwanger, C&I Accelerated Master's with specialization in Mathematics Education. *Affordances of virtual manipulatives in the mathematics classroom*. (Committee Member). Spring, 2021
- Claire Tighe, C&I Accelerated Masters with specialization in Mathematics Education. *Math anxiety: What can teachers do?* (Committee Member). Spring, 2021
- Ali Smith, C&I Accelerated Master's with specialization in Mathematics Education. *Teachers' selection and implementation of manipulatives for the elementary mathematics classroom*. (Committee Chair). Spring 2019.
- Alyssa Livingston, C&I Accelerated Master's with specialization in Mathematics Education (Committee Member). Spring 2019.
- Emily Bunn, C&I Accelerated Master's with specialization in Mathematics Education. *Alignment of the Texas Essential Knowledge and Skills (TEKS) geometry standards to the van Hiele levels of geometric thinking*. (Committee Chair). Spring 2019.
- Becca Wilson, C&I Accelerated Master's with specialization in Mathematics Education. *Elementary Teachers' Beliefs Related to Self-Efficacy and Teaching Mathematics*. (Committee Chair). Spring 2019.
- Ilse Espino, C&I Accelerated Master's with specialization in Mathematics Education. *Exploring the nature of small-group discourse in a mathematics class of emerging multilinguals*. (Committee Member). Spring, 2019.
- Jennifer Danhof, C&I Accelerated Master's with specialization in Mathematics Education. *A framework for analyzing virtual manipulatives*. (Committee Member). Spring, 2019.
- Monica Lopez, C&I Accelerated Master's with specialization in Mathematics Education. *Enhancing emergent bilinguals' geometric thinking & Language and literacy skills* (Committee Member). Spring, 2019.
- Ashley McMurtrey, C&I Accelerated Master's with specialization in Mathematics Education. *An alignment of the kindergarten through fifth grade geometry and measurement Texas Essential Knowledge and Skills* (Committee Chair). Spring 2018.
- Nicole Shirmer, C&I Accelerated Master's with specialization in Mathematics Education. *Aligning the three revisions of the kindergarten through fifth grade number and operations Texas Essential Knowledge and Skills*. (Committee Chair). Spring 2018.
- Rani Parkinson, C&I Accelerated Master's with specialization in Mathematics Education. *Knowledge packages for the number and operations strand of the sixth-grade mathematics curriculum in Texas*. (Committee Member). Spring 2018.
- Bryana Canales, C&I Accelerated Master's with specialization in Mathematics Education. *An analysis of state-level mathematics scores for the middle grades*. (Committee Member). Spring 2018.
- Haley Fussell, C&I Accelerated Master's with specialization in Mathematics Education. *Finding the right manipulative: How teachers choose tools for learning mathematics*. (Committee Member). Spring 2018.
- Sarah Clements, C&I Accelerated Master's with specialization in Mathematics Education. *Teachers at different stages, Perspectives on teaching mathematics* (Committee Chair). Spring 2017.
- Jordan MacAskill, C&I Accelerated Master's with specialization in Mathematics Education. *Instructional strategies of language use in middle level dual language mathematics instruction* (Committee Chair). Spring 2017.
- Lauren Reineking, C&I Accelerated Master's with specialization in Mathematics Education. *How the transition to teaching affects a first-year teacher* (Committee Chair). Spring 2017.
- Sarah Westphal, C&I Accelerated Master's with specialization in Mathematics Education. *Preparing preservice teachers: Creating a college course on educational policy* (Committee Chair). Spring 2017.
- Taylor White, C&I Accelerated Master's with specialization in Mathematics Education. *Aligning the mathematics content of the Texas Essential Knowledge and Skills and the Common*

Core State Standards (Committee Chair). Spring 2017.
 Steven Goeken, Accelerated Master's. *Pragmatic grounded theory: A methodological inquiry into gifted and talented education*. (Committee Member). Spring 2014.
 Michelle Kean, Accelerated Master's. *Student experiences and perceptions of physics: Practical work, labs, and theory*. (Committee Member). Spring 2014.
 Nicole Tippit, Accelerated Master's. *Effect of virtual manipulatives on students with learning disabilities*. (Committee Member). Spring 2014.
 Caitlin Kuisis, Accelerated Master's. *Developing an early warning system: Signs and symptoms of addictive behaviors*. (Committee Member). Spring 2012.

ii. *Thesis*

- *In progress*

Ronnie Cunningham C&I Traditional Master's with specialization in Mathematics Education (Committee Member).
 Wendy Larmour, C&I Traditional Master's with specialization in Mathematics Education (Committee Member).
 Smith, Natalie, M.Ed. Mathematics Education (Committee Member)
 Brucks, Laura, M.Ed. Mathematics Education (Committee Member)

- *Completed*

Lopera, Yenyfer (2022) C&I Traditional Master's with specialization in Mathematics Education. *Mathematical and Pedagogical Content Knowledge Mathematics Teachers Draw Upon When Reasoning About and Teaching Ratios, Proportions, and Proportional Reasoning in Sixth-grade Classrooms* (Committee Member).
 Payton Parrish (Fall 2021) C&I Traditional Master's with specialization in Mathematics Education. *Small-group versus whole-class instruction in the elementary mathematics classroom* (Committee Member).
 Chelsey Hayward (Summer 2021), C&I Traditional Master's with specialization in Mathematics Education. *Transitioning students from performance goal orientation to mastery goal orientation: Classroom goal structure, perceptions, and motivation in mathematics*. (Committee Member).
 Matt Troyanowski (Spring 2021), C&I Traditional Master's with specialization in Mathematics Education. *Number Talks as Professional Development for Inservice Teachers' Attending to Student Mathematical Thinking*. (Committee Chair).
 Michael Lecak (Spring 2018). M.Ed. Mathematics Education. *Proportional reasoning strategies: An exploratory case study on two NCAA basketball players* (Committee Chair).
 Harrell, Zach (Fall 2016). M.Ed. Mathematics Education. *High School Geometry Students' Interpretations of the Equal Symbol* (Committee Member)
 Irin Sultana, (Fall 2015). M.Ed. Mathematics Education. *An examination of a community college instructor who uses technologies as pedagogical tools to teach algebra*. (Committee Member)
 Rebecca Couey (Spring 2014). M.Ed. Mathematics Education. *The transition of at-risk students to independent learners*. (Committee Member)
 Ryan Perry, M.Ed. Mathematics Education. (Spring 2014). *Manipulative use in the middle school mathematics classroom*. (Committee Member)

iii. *Dissertations*

- *In progress*
- *Completed*

Anne Holder, Doctor of Educational Leadership. A program evaluation of 5th-12th grade science curriculum at eagle point Christian school. (Committee Member).

d. Internal support for academic work received or pending for academic work

Andrews Institute of Research in Mathematics and Science Education, *Vosaic Subscription Renewal*, (\$948.10), May 2024.

Andrews Institute of Mathematics and Science Education, *Angles Video Software One Year Subscription*, (\$800.00), September 2023.

Andrews Institute of Mathematics and Science Education, *GA copies of textbooks for EC-6 and EC-8*, (\$269.54), March 2020.

Andrews Institute of Mathematics and Science Education – *Middle/Secondary Mathematics Preservice Teachers Engagement in Focused Video Analysis*, May 2019 (\$756.20), June 2019.

Andrews Institute of Mathematics and Science Education – *Computer Upgrade*, (\$1291.20), August 2019.

Andrews Institute of Mathematics and Science Education – *Extending the Teacher Scholar Model: Middle/Secondary Mathematics Preservice Teachers Engagement in Focused Video Analysis*, September 2018 (\$199.00)

College of Education Research Fund – *funding for the Purchase of two Angles Video Analysis Software Subscriptions*, September 2018 (\$1600)

Andrews Institute of Mathematics and Science Education – *Extending the Teacher Scholar Model: Middle/Secondary Mathematics Preservice Teachers Engagement in Focused Video Analysis*, November 2017 (\$2067.00)

Andrews Institute of Mathematics and Science Education – *Focused Video Analysis*, May 2019 (\$2000), September 2017.

Andrews Institute of Mathematics and Science Education – *Supporting the Teacher Scholar Model: Engaging Research Assistants in Analyzing Video Instances of Teaching and Learning*, April 2017 (\$300.00)

Andrews Institute of Mathematics and Science Education – *Extending the Use of Video in Mathematics Methods Courses*, August 2016 (\$131.40)

Andrews Institute of Mathematics and Science Education – *Supporting the Teacher Scholar Model: Engaging Research Assistants in Analyzing Video Instances of Teaching and Learning*, January 2016 (\$300)

Andrews Institute of Mathematics and Science Education – *Using Video to Improve Preservice Mathematics Teachers' Understanding and Implementation of High-Quality Mathematics Curricula and Teaching Knowledge*, June 2015 (\$900)

College of Education – *Studiocode lab proposal*, September 2013 (\$34,681)

Andrews Institute of Mathematics and Science Education – *Studiocode Lab MacBook Pro*, September 2013 (\$1,399)

Instructional Design Grant – *Using technology to accelerate the learning process through an iterative cycle of See it, try it, and reflect on it to promote understanding of key teaching practices*, 2012 (\$3,350)

e. Academic Advising

Advising of undergraduate mathematics and science education majors, 4-1 students, and master's in mathematics education students (Spring 2012 – present)

● **Research and creative activities**

a. Refereed publications

i. Blind peer reviewed conference proceedings

Switzer, J. M., & Teuscher, D. (2023). Professional noticing: The interrelated skills of attending to and interpreting student mathematical thinking. *Proceeding of the forty-fifth annual meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education*, 534-535.

Teuscher, D., & Switzer, J. M. (2019). Secondary pre-service teachers' images and interpretations of student mathematical thinking. *Proceeding of the 41st annual meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education*, 1309-1313.

Teuscher, D., & Switzer, J. M. (2018). Secondary mathematics student teachers' types of noticing while teaching. *Proceedings of the 40th annual meeting of the North American Chapter of the*

ii. *Blind peer reviewed articles*

- Switzer, J. M., & Teuscher, D.** (2025). Secondary Mathematics Student Teachers' Professional Noticing Skills of Attending to and Interpreting Student Mathematical Thinking: Differences Across Focused Video Analysis Experiences. *Investigations in Mathematics Learning*, 1-17. <https://doi.org/10.1080/19477503.2025.2478799>. (24% acceptance rate).
- Switzer, J. M.** (2017). U.S. grade 4–6 students' rational-number substitutions for odd-sum unknown addend tasks. *Investigations in Mathematics Learning*, 1-21. [doi:10.1080/19477503.2017.1371999](https://doi.org/10.1080/19477503.2017.1371999). (24% acceptance rate).
- Switzer, J. M.** (2016). Grade 4-6 students' meanings for unknown addends: Implications for algebra. *Banneker Banner*, 30(1), 23-35.
- Teuscher, D., & **Switzer, J. M.** (2016). Unpacking the practice of probing student thinking. *Mathematics Teacher Educator*, 5(1), 47-64. doi.org/10.5951/mathteaceduc.5.1.0047 (Acceptance Rate: 13%).
- Switzer, J. M.** (2016). What conceptions have US Grade 4-6 students generalized for formal and informal common representations of unknown addends? *International Journal of Mathematics Teaching and Learning*, May, 1-43. (Acceptance Rate: 11-20%).
- Quebec Fuentes, S., **Switzer, J. M.**, & Jimerson, J. B. (2015). Catching up to the CCSS: A principal navigates out-of-subject instructional leadership. *Journal of Cases in Educational Leadership*, 18(3), 195-214. [doi:10.1177/1555458915593978](https://doi.org/10.1177/1555458915593978). (Acceptance Rate 27%).
- Switzer, J. M.**, Buchheister, K., & Dougherty, B. (2014). Examining number: A soft idea. [News & Views]. *Teaching Children Mathematics*, 21(2), 69-71. (Acceptance Rate: 25%).
- Switzer, J. M.** (2014). Graphing inequalities, connecting meaning. *Mathematics Teacher*, 107(8), 580-584. (Acceptance rate: 17%).
- Lannin, J.K., van Garderen, D., **Switzer, J.M.**, Buchheister, K. Hill, T., & Jackson, C., (2014). The mathematical development in number and operation for struggling first graders. *Investigations in Mathematics Learning*, 6(2), 19-47. (Acceptance rate: 37%).
- Switzer, J. M.** (2013). Linking Models: Reasoning from Patterns to Tables and Equations. *The Australian Mathematics Teacher*, 69(1), 3-7. (Acceptance rate: 70%).
- Switzer, J. M.** (2012). Bridging the math gap. *Virginia Mathematics Teacher* (Reprinted with permission from NCTM from *Mathematics Teaching in the Middle School*, 15(7), 400-405. (Acceptance rate: 21-30%).
- Switzer, J. M.** (2010). Bridging the math gap. *Mathematics Teaching in the Middle School*, 15(7), 400-405. (Acceptance rate: 25%).

iii. *Editorially reviewed articles*

- Quebec Fuentes, S., & **Switzer, J. M.** (2017). A guided-inquiry approach supporting preservice elementary teachers' development of a mathematics teacher knowledge framework. *Link*, 7(1), 5-7.
- Switzer, J. M.**, & Hoppe, T. C. (2017). Problem Solvers Solutions: Birthday party patterns. *Teaching Children Mathematics*, 23(6), 335-336.
- Switzer, J. M.** (2016). Problem Solvers Solutions: Hundred chart challenge. *Teaching Children Mathematics*, 23(2), 68-70.
- Switzer, J. M.** (2016). Problem Solvers Problem: Sharing a Birthday cake. *Teaching Children Mathematics*, 22(9), 520-524.
- Switzer, J. M.** (2016). Problem Solvers Problem: Birthday party patterns. *Teaching Children Mathematics*, 22(6), 330-333.
- Switzer, J. M.** (2015). Problem Solvers: Problems: Which lake is bigger? *Teaching Children Mathematics*, 22(4), 208-212.
- Switzer, J. M.** (2015). Problem Solvers Problem: Hundreds chart challenge. *Teaching Children Mathematics*, 22(2), 65-70.

iv. *Editorially reviewed book chapters*

- Switzer, J. M.**, Teuscher, D., & Siebert, D. (2015). See it, Try it, and Reflect on it (STaR): Using video to scaffold and support preservice teachers in the reflective process of developing participation

questioning discourse. In E. Ortlieb, L. Shanahan, & M. McVee (Eds.), *Video Research in Disciplinary Literacies* (Vol. 6, pp. 3-20): Emerald Group Publishing Limited.

Pomeranke, S., McNaught, M., & Switzer, J. M. (2010). Insights into dynamic mathematical learning environments. In Z. Usiskin, K. Andersen & N. Zotto (Eds.), *Future curricular trends in school algebra and geometry. Proceedings of a conference.* (pp. 287-294). Chicago: Information Age Publishing.

v. *Invited electronic article*

Quebec Fuentes, S., & Switzer, J. M. (2014). Developing a mathematics teacher knowledge framework. Retrieved from <http://www.edutopia.org/blog/developing-math-teacher-knowledge-framework-sarah-fuentes-matt-switzer>

b. Materials or activities accepted or scheduled but not yet printed, released, or presented

i. *Blind peer reviewed articles*

Switzer, J. M., & Teuscher, D. (In Press). Design principles of Focused Video Analysis. *Journal of Mathematics Teacher Education in Texas.*

ii. *Blind peer reviewed conference proceedings*

iii. *Editorially reviewed articles*

iv. *Presentations*

c. Materials under active review

i. *Blind peer reviewed articles*

Teuscher, D., & Switzer, J. M. (Under Review). Focus Video Analysis: Intentionally Directing Pre-service Teachers' Noticing of Student Mathematical Thinking. *Mathematics Teacher Educator.*

ii. *Blind peer reviewed conference proceedings*

Switzer, J. M. (Under Review). *Focusing Preservice Mathematics Teachers' Noticing* Annual Conference of the Association of Mathematics Teacher Educators - Texas, Dallas, TX. ([link](#))

Switzer, J. M. (Under Review). *Interrelated noticing: Extending a systematic review of mathematics teachers learning to notice in video-based programs* Annual Conference of the Association of Mathematics Teacher Educators, Spokane, WA. ([link](#)). [Confirmation email](#)

iii. *Editorially reviewed articles*

iv. *Presentations*

d. Materials under development review

i. *Blind peer reviewed articles*

Switzer, J. M. (In progress) Student teachers' subtypes of professional noticing in written justifications compared to researchers' analysis of the same video instances: A discipline-specific perspective across student teachers prior Focused Video Analysis experiences. *Investigations in Mathematics Learning.*

Switzer, J.M. (Revising). Understanding grade 4-6 students' images for unknown addend equations: Do representations matter? *School Science and Mathematics.*

ii. *Blind peer reviewed conference proceedings*

iii. *Editorially reviewed articles*

iv. *Presentations*

e. Papers presented, participation on panels, etc., at scholarly meetings

i. *Presentations*

- Teuscher, D. & **Switzer, J. M.** (2024). Professional Noticing: What Differences do we see in Analyzing Interrelated Noticing Skills Versus Individual Skills? Twenty-eighth Annual Conference of the Association of Mathematics Teacher Education, Orlando, FL.
- Switzer, J. M.** (2024) Student Teachers' Professional Noticing in Written Justifications Compared to Researchers' Analysis of the Same Video Instances. Twenty-eighth Annual Conference of the Association of Mathematics Teacher Education, Orlando, FL.
- Switzer, J. M.,** & Teuscher, D. (2023). *A Comparison of Secondary Preservice Teachers' Attending to Student Mathematical Thinking Based on Their Program*. Twenty-seventh Annual Conference of the Association of Mathematics Teacher Education, New Orleans, LA.
- Switzer, J.M.** & Teuscher, D. (2022) *Promoting preservice teachers' images and interpretations of student mathematical thinking through scaffolded focused video analysis*. Twenty-Sixth Annual Association of Mathematics Teacher Educators, February 10-12, Henderson, NV
- Teuscher, D., & **Switzer, J. M.** (2021). *Improving Secondary Preservice Mathematics Teachers' Attention to Student Mathematical Thinking* Annual Conference of the Association of Mathematics Teacher Educators, Virtual.
- Quebec Fuentes, S., Hayward, C., & **Switzer, J. M.** (2021). *Preservice Teachers' Use of Supplemental Educative Features to Evaluate and Modify Mathematics Curriculum Materials*, Annual meeting of the Association of Mathematics Teacher Education, Virtual.
- Teuscher, D., & **Switzer, J. M.** (2020). *A comparison of secondary preservice teachers' attention to student mathematical thinking based on their program*. Paper presented at the Annual Conference of the Association of Mathematics Teacher Education, Phoenix, AZ.
- Teuscher, D., & **Switzer, J. M.** (2019). *Secondary Pre-service Teachers' Images and Interpretations of Student Mathematical Thinking*. Paper presented at the International Group for the Psychology of Mathematics Education - North America, St Louis, MO.
- Switzer, J. M.,** & Teuscher, D. (2019) *Secondary student teachers' ability to respond to student mathematical thinking*. Twenty-Third Annual Association of Mathematics Teacher Educators, February 7-9, 2019, Orlando, FL.
- Teuscher, D., & **Switzer, J. M.** (2018). *Secondary mathematics student teachers' types of noticing while teaching*. Paper presented at the International Group for the Psychology of Mathematics Education - North America, Greenville, SC.
- Switzer, J. M.,** & Teuscher, D. (2018). *How does video analysis influence pre-service teachers' ability to notice student mathematical thinking while teaching?* Twenty-Second Annual Conference of the Association of Mathematics Teacher Educator, February 8-10, 2018, Houston, TX.
- Teuscher, D. & **Switzer, J. M.** (2017). *How does focused video analysis in methods courses impact student teachers' attending to student thinking?* Twenty-First Annual Association of Mathematics Teacher Educators Conference, February 9-11, 2017, Orlando, FL.
- Switzer, J. M.,** Teuscher, D., Palsky, K. (2016). *Learning to teach through video analysis: Preservice teachers learning and engaging in participation questioning discourse*. Twentieth Annual Association of Mathematics Teacher Educators Conference, Irvine, CA. (50% acceptance rate).
- Switzer, J. M.** & Teuscher, D. (2015) *Unpacking the Practice of Probing Student Thinking*. 2015 Studiocode® User Conference, Fort Worth, TX.
- Switzer, J. M.,** & Teuscher, D. (2015). *Engaging preservice teachers in probing student thinking through the video-based model seeing, trying, reflecting (STaR)*. Nineteenth Annual Association of Mathematics Teacher Educators Conference, Orlando, FL. (Acceptance rate 43%)
- Quebec Fuentes, S., & **Switzer, J. M.** (2014). *A Guided-Inquiry Approach Supporting Preservice Elementary Teachers' Development of a Mathematics Teacher Knowledge Framework*. Eighteenth Annual Association of Mathematics Teacher Educators Conference, Irvine, CA. (Acceptance Rate: 53%)
- Switzer, J. M.** (2013). *Grade 4-6 student number substitutions for informal and formal variables*. Research Pre-session of the Annual Meeting of the National Council of Teachers of Mathematics, Denver, CO.
- Quebec Fuentes, S., **Switzer, J. M.,** & Wasserman, N. (2013) *Advanced Mathematics Content: A Comparative Analysis of CCSSM and Mathematics Textbooks for Teachers*. Seventeenth Annual Association of Mathematics Teacher Education Conference, Orlando, FL.
- Teuscher, D. & **Switzer, J. M.** (2013) *The iterative model seeing, trying, reflecting accelerates preservice teachers' ability to implement key teaching practices*. Seventeenth Annual Association of Mathematics Teacher Education Conference, Orlando, FL.

- Switzer, J. M.** (2011). *Grade 4-6 student meanings for informal and formal variable representations*. Research Pre-session of the Annual Meeting of the National Council of Teachers of Mathematics, Indianapolis, IN
- Lannin, J. K., van Garderen, D., **Switzer, J. M.**, Davis, J., & Buchheister, K. (2011). *The magnitude learning trajectory of struggling first grade students*. Research Pre-session of the Annual Meeting of the National Council of Teachers of Mathematics, Indianapolis, IN
- Switzer, J. M.** (2010) *Elementary students' understanding of variable: The role of problem type and representation*. Short communication paper presented at Mathematics Education Research Groups of Australasia (MERGA) 33 Conference: Fremantle, WA, Australia.
- Lannin, J., van Garderen, D., Jackson, C., **Switzer, J.M.**, Buchheister, K. (2009). *The mathematical development of struggling first grade students*. Paper presented at the Annual Meeting of the American Education Research Association, San Diego, CA.
- van Garderen, D., Lannin, J., **Switzer, J. M.** (2009). *Assisting elementary teachers in assessing mathematical understanding of struggling learners in number and operation*. Thirteenth Annual Association of Mathematics Teacher Education Conference, Orlando, FL.
- Reys, B., Lloyd, G., Chval, K., Bannister, V., **Switzer, J. M.** (2009). *Why curriculum matters in teacher education: Helping future teachers expand their views of mathematics curriculum*. Thirteenth Annual Association of Mathematics Teacher Education Conference, Orlando, FL.
- Switzer, J. M.**, Buchheister, K. (2007, December). *Alternative algorithms: Not just elementary school algorithms!* Presented at the annual meeting of the Missouri Council of Teachers of Mathematics, Columbia, Missouri.

ii. *Poster presentations*

- Switzer, J. M.**, & Teuscher, D. (2023, Oct 1-4, 2023). *Professional noticing: the interrelated skills of attending to and interpreting student mathematical thinking* 45th Annual Meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education, Reno, NV.
- Switzer, J. M.** (2013). *Grade 4-6 student number substitutions for informal and formal variables*. Poster presented at the Service, Teaching, and Research (STaR) Annual Conference preceding the Association of Mathematics Teacher Education Conference, Orlando, FL.
- Lannin, J.K., van Garderen, D., **Switzer, J. M.**, & Buchheister, K. (2012, April). *The magnitude development of struggling first grade learners*. Poster presented at the Annual Meeting of the American Educational Research Association. Vancouver, BC. April 2012.
- Switzer, J. M.**, Lannin, J., van Garderen, D., Buchheister, K., Davis, J., Jackson, C. (2010, July). *First-grade student misconceptions with cardinality and ordinality*. Poster presentation at the Mathematics Education Research Group of Australasia (MERGA) 33 Conference: Fremantle, WA, Australia.
- Switzer, J. M.**, Buchheister, K. (2008, February). *Mathematically at Risk Students*. Poster presentation at Center for the Study of Mathematics Curriculum (CSMC) research conference: Phoenix, Arizona.
- Nevels, N., **Switzer, J. M.** (2008, February). *High school mathematics: State-level curriculum standards and graduation requirements*. Poster presentation at Center for the Study of Mathematics Curriculum (CSMC) research conference: Phoenix, Arizona.

iii. *Unpublished scholarly work*

- Switzer, J. M.** (2011). *Grade 4- 6 student conceptions and utilization of informal and formal variable representations across mathematically equivalent tasks*. Ph.D. Doctoral dissertation, University of Missouri, Columbia, MO. Retrieved from <https://mospace.umsystem.edu/xmlui/handle/10355/15818>

f. **Editorships, consulting, adjudications**

i. *Editorships*

- Editor, *Journal for Mathematics Teacher Education in Texas*. Appointed position, Association of Mathematics Teacher Educators – Texas. (2023-2024).
- Associate Editor, *Journal for Mathematics Teacher Education in Texas*. Appointed position, Association of Mathematics Teacher Educators – Texas. (2022-2023).
- Copy Editor, *Journal for Mathematics Teacher Education in Texas*. Appointed position, Association of

Mathematics Teacher Educators – Texas. (2018-2022).
Co-editor of the Problem Solving Department for the National Council of Teachers of Mathematics' (NCTM) elementary practitioner journal *Teaching Children Mathematics*. (2015-2017).

ii. *Invited Presentations*

Switzer, J. M., Lannin, J. K., van Garderen, D., & Buchheister, K. (2011). *Grade 1-2 struggling mathematics students' magnitude trajectories: Comparing and Ordering*. University of Western Australia, Perth, Australia.

Switzer, J. M. (2011). *Grade 4-6 student meanings for informal and formal variable representations*. University of Western Australia, Perth, Australia.

iii. *Commissioned paper*

Reys, B. J., Chval, K. B., & **Switzer, J. M.** (2008). *Mathematics standards for kindergarten: Summary of state-level attention and focus*. Washington, DC: Paper commissioned by the Committee for Early Childhood Mathematics, Mathematics Science Education Board, Center for Education, Division of Behavioral Sciences and Education, National Research Council. Cited in Cross, C. T., Woods, T. A., & Schweingruber, H. (Eds.). (2009). *Mathematics Learning in Early Childhood: Paths Toward Excellence and Equity*. Washington, D.C.: National Academies Press.

iv. *Consultantships*

Identified as an expert in grades 6-8 mathematics and invited to facilitate and plan (within a team) four breakout workshops and facilitate two study groups at the National Council of Teachers of Mathematics' (NCTM) Algebra Readiness Institute. My expertise was recognized as contributing to the program and being of great interest to the anticipated 500 institute attendees.

- July 18-20, 2016, in Denver, CO.
- July 20-22, 2015, in Chicago, IL.
- July 7-9, 2014, in San Diego, CA.
- July 8-10, 2013, in New Orleans, LA.

Consulted by Dr. Robert Reys, University of Missouri, for suggestions on how leadership might be developed within doctoral programs in mathematics education. Dr. Reys incorporated my suggestions, along with those of other recent graduates of doctoral programs in mathematics education, in Reys, R. (2013). Promoting leadership in doctoral programs in mathematics education. *Journal of Mathematics Education at Teachers College* (Spring-Summer), 15-18.

Hired to review alignment of an NSF funded research project developing an Algebra Progress Monitoring assessment with the Common Core State Standards for Mathematics, Co-PIs Dr. Anne Foegen, Iowa State University and Dr. Barbara Dougherty, University of Missouri.

g. Internal grants received

Junior Faculty Summer Research Program – *Grade 4-6 student conceptualization and utilization of informal and formal representations of variable across mathematically equivalent tasks*, 2012 (\$6,000)

• **SERVICE**

a. College service

- Deans for Impact, Initial core member (Fall 2020 – present)
- Coordinator for the Andrews Institute Mathematics and Science Trail (2020-2021)
- Andrews Institute and Answers Institute Lunch & Learn Participant (September 9, 2015)
- Andrews Institute Scholars Lunch attendee and speaker (November 15, 2013)
- Member of Science Education Search Committee (Spring 2012)
- Andrews Institute of Mathematics and Science Education (Fall 2011-present)
- Program Evaluation: Possibilities for Community Engagement and Research participation (May 2, 2021)
- College of Education Chair and Liaison to the Honors College (September 2019 – present)
- Chair - College of Education Departmental Review Board (September 2018 – September 2020)

- College of Education Departmental Review Board (September 2017 – September 2020)
- Member of Curriculum Studies Search Committee (Aug 2014- Feb 2015)
- College of Education Cabinet (2014 – 2016)
- College of Education Faculty Meeting Studiocode® presentation (Spring 2014)
- Worked with Dr. Patton, Dr. Alexander, and Dr. Anderson to set up new Mac computer lab, ordering new iMacs, and acquire Studiocode® licenses for new computers (Spring 2013 – present)
- Master’s and Certification meeting participant (Fall 2013 – present)
- Curriculum and Instruction Graduate Degree Restructuring Committee (2013 - 2015)
- FWISD collaboration discussion group (Spring 2014 – present)
- Global Engagement Committee (2012 – present)
- e-portfolio Committee (2014 – present)
- Early Childhood Program Committee (Fall 2011 – present)
- Middle/Secondary Program Committee (Fall 2011 – present)

Events Attended Representing the College of Education

- TCU Honors College Boller Competition Finals judge (Spring 2022, 2023, 2024)
- Frog Camp Faculty Mentor (2012-2019, 2021 - present)
- Chancellor Assembly Participant (2012-2020)
- TCU Fall Convocation participant (2014, 2015, 2017)
- Coordinated and attended Studiocode® informational presentation for TCU faculty and staff (April 14, 2014).
- ePortfolio Discussion (April 4, 2014)
- EC-6 Welcoming Meeting attendee for Junior-1 Block. (Fall 2011, Fall 2012)
- Middle/Secondary Welcoming Meeting attendee (Fall 2012)
- *Reasoning Mind* meeting attendee (2012)

b. University service

- Faculty Senate ad hoc Academic Progression Committee (2022 – 2023).
- Faculty Senator from the College of Education (2021 – 2024).
- Faculty Relations Committee of the Faculty Senate (2021 – 2024).
- Faculty member of the Traffic Regulations and Appeals Committee (2019 – 2022, 2024-2027).
- Faculty member of the University Compensation Advisory Council (January 2015 – present).
- Invited and participated in Research Focus Group hosted by Office of Research (March 23, 2017).
- Liaison between Studiocode® Business Group and Texas Christian University to initiate and coordinate the Andrews Institute-sponsored Studiocode® User Conference (April 14, 2014).
- Initiated and coordinated the Andrews Institute-sponsored Studiocode® informational presentation for TCU faculty and staff (April 14, 2014).
- Initiated and coordinated the *Publish and Flourish* workshop for TCU faculty (November 9, 2012).
- Initiated and coordinated research/writing accountability groups for participants in the *Publish and Flourish*.
- Met with a group of high school seniors involved with AVID and the College Application and Scholarship Help (CASH) club to discuss and answer questions about the transition to and differences in expectations from high school to college (November 17, 2011).

c. Events Attended Representing the University

1. Faculty participant in the first *Speed Connection Evening* (April 21, 2016) the TCU Center for Connection Culture sponsored the “**Speed Connection**” evening to give faculty, staff and students an easy and fun format to connect with each other.

d. Community activities directly related to professional skills

- i. Vice President of Publications. Elected position. *Association of Mathematics Teacher Educators – Texas*. (2024-2027).
 - ii. Editor, *Journal for Mathematics Teacher Education in Texas*. Appointed position, Association of Mathematics Teacher Educators – Texas. (2023-2024).
 - iii. Assistant Editor for the *Journal of Mathematics Teacher Education in Texas* (2022-2023).
 - iv. Copy Editor for the *Journal of Mathematics Teacher Education in Texas* (2018-2022).
 - v. Liaison between the 2012 Scholarship, Teaching and Research (STaR) cohort and the Association of Mathematics Teacher Educators.
- i. **Reviewer**
- *Educational Researcher*
 - Learning trajectory-based instruction: Toward a theory of teaching (Reviewed Dec. 2011).
 - *International Journal for Mathematics Teaching and Learning*
 - Investigation of pre-service teachers' pedagogical content knowledge related to division by zero (Reviewed September 2017)
 - Supporting Mathematical Reasoning Through Productive Discursive Practices: Generalization and Justification Context (Reviewed December 2015).
 - 8th Grade Algebra I and AP, IB, and Dual Credit Course Enrollment (Reviewed July 13, 2015).
 - The role or quality mathematics instruction: Fostering students' understanding of graphs (Reviewed June 2014).
 - Indicators of student engagement during introductory algebra: Teachers' observations of their instructional practices (Reviewed November 2013).
 - What do the error patterns tell us about Hong Kong Chinese and Australian students' understanding of decimal numbers? (Reviewed May 2013).
 - From sailing ships to subtraction symbols: Multiple representations as a means to develop mathematical understanding (Reviewed July 2012).
 - The effect of open-ended tasks on fourth graders' mathematical achievement and attitudes (Reviewed Dec. 2011).
 - *Journal of Mathematics Teacher Education in Texas*
 - The missing color in STEM: Understanding and correcting the lack of Black representation in STEM (Reviewed May 28, 2025)
 - *Mathematical Behavior*
 - Fifth graders working on direct and inverse forms of a function. A study within a functional approach to early algebra [Manuscript # MATBEH_2019_87] (Reviewed Aug 2019).
 - *Mathematics Education Research Journal*
 - Providing opportunities for preservice teacher learning through guided analysis of video lessons (Reviewed Aug 2019).
 - *Mathematics Teacher*
 - Mathematical tool collections: Preventing misconceptions (Reviewed May 2018).
 - Equal sign: One symbol and some concepts (Reviewed June 2014).
 - Angry Birds & shooting marshmallows in math? (Reviewed July 2013).
 - *Mathematics Teacher: Learning and Teaching Pre-K-12*
 - Putting Errors at the Center of Your Classroom (Reviewed August 6, 2025).
 - Learning Mathematics with GPS or Exploration? (Reviewed December 2019)
 - Mathematical storytelling and problem-posing in K-2 classrooms (Reviewed September 2021)
 - *Mathematics Teaching in the Middle School*

- Percent sense: Slowing down to think" [Paper #13-01-022-3D] (Reviewed Jan. 2013).
- *Psychology of Mathematics Education – North America Conference*
 - Mathematics and pedagogy: training for implementation of high school common core state standards for mathematics (Reviewed April 2018).
 - New teachers' visions of how group worthy tasks can contribute to creating equitable mathematics classrooms (Reviewed April 2018).
 - Noticing in small groups: beyond mathematical thinking (Reviewed April 2018).
 - Supporting an inquiry stance through double demonstration lessons (Reviewed April 2018).
 - Unpacking a geometric learning trajectory through the analysis of a mathematical task and students' strategies (Reviewed April 2018).
- *School Science and Mathematics*
 - Mathematical Modeling Opportunities Reported by Secondary Mathematics Preservice Teachers and Instructors [Manuscript # SSM-ME-09-2018-030] (Reviewed November 20, 2018).
 - Representations and Conceptions of Variables in Students' Early Understanding of Functions [manuscript # SSM-ME-12-2016-040] (Reviewed April 15, 2017).
 - Test Validity and Child Development: Third Grade Mathematics Assessment [manuscript # SSM-ME-01-2015-01] (Reviewed April 2015).
 - Applying NAEP to improve mathematics content and methods courses for pre-service elementary and middle school teachers [Manuscript SSM-ME-07-2013-030.R1] (Reviewed March 2014).
 - Applying NAEP to improve mathematics content and methods courses for pre-service elementary and middle school teachers [Manuscript SSM-ME-07-2013-030] (Reviewed October 2013).
- *Teaching Children Mathematics*, 2012
 - Build me if you can (Reviewed August, 2015).

ii. Other

- Get the Facts Out Champion (2022 – present)
- Culturally Aware Mentoring: Optimizing Mentoring Relationships Webinar by the Council of Graduate Schools (3/13, 2020)
- Member of NSF ITEST review panel (9/23/19-24/29/19)
- Member of NSF DRK-12 review panel (2012)
- Presentation to University of Missouri College of Education Ambassadors. How do we coordinate teaching, learning, and grading? Student success. Presented April 7, 2010. University of Missouri.
- Co-Professional Development Provider for middle school mathematics teachers, Long Middle School, St. Louis, MO. Designed and implemented professional development for mathematics department to incorporate inquiry into mathematics program. 2008-2009. Missouri Partnership for Educational Renewal (MPER) Grant. 2008-2009.
- Professional development designer for junior high school: Lead *Connected Mathematics Project* teachers, Poudre School District, Fort Collins, CO. 2005-2007.
- Professional Development designer for Elementary Lead Everyday Mathematics Teachers, Poudre School District, Fort Collins, CO. 2005-2007.
- Member of Colorado Mathematics Intervention Team (COMMIT). Group of district, state, university, and mathematics education researchers and educators collaborating on intervention for Colorado mathematics students underachieving in mathematics. 2005-2007.

b. Professional memberships

AERA	American Educational Research Association, (2007 - 2014)
AMTE	Association of Mathematics Teacher Educators, (2007 – present)
AMTE-TX	Association of Mathematics Teacher Educators in Texas, (2014 – present)
MERGA	Mathematics Education Research Group of Australasia, (2007 – present)
NCSM	National Council of Supervisors of Mathematics (2005-2008, 2022 – present)

NCTM	National Council of Teachers of Mathematics, (1997 – present)
PME-NA	North American Chapter of the international Group for the Psychology of Mathematics Education, member (2012 – present)
RCML	Research Council on Mathematics Learning, (2016 – present)
SSMA	School Science and Mathematics Association, (2012 – present)
TCTM	Texas Council of Teachers of Mathematics, (2014 – present)
TODOS	TODOS: Mathematics for ALL, (2016 – present)
TCEA	Texas Computer Education Association (2022 – present)

c. Professionally related honors and awards

- Nominated for AMTE-TX Vice President of Publications, May 6, 2024
- Nominated by Dr. Craig S. McCarron for AMTE-TX Secretary (June 11, 2018)
- 2012 STaR Fellow for the NSF funded Service, Teaching, and Research (STaR) for Early Career Mathematics Educators project.
- Panhellenic Faculty of the Month (November 2011)
- Center for the Study of Mathematics Curriculum (CSMC) Fellow (2007-present)
- John D. Bies International Travel Scholarship: Travel Fellowship (2010)
- Robert M. Frank Fellowship Fund Scholarship (2009-11)
- Esther Choate Lacey Endowment Fund Scholarship (2008-09)