

## Education

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- Ph.D., Educational Psychology (2013)**, The Pennsylvania State University, University Park, PA. Dissertation: *Inspiring integration in college students reading multiple biology texts*.
- M.S., Educational Psychology (2007)**, The Pennsylvania State University, University Park, PA. Thesis: *Intertextuality: A study of readers with multiple texts*.
- B.A., Psychology & Sociology (2005)**, Thiel College, Greenville, PA.

## Academic Appointments

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- 2017-present**     **Assistant Professor of Educational Psychology**, Arizona State University, Mary Lou Fulton Teachers College, Division of Teacher Preparation  
Affiliate Faculty: *Institute for Social Science Research* (2021-Present)  
Member: *Graduate Faculty Mentor Academy* (2021-Present)
- 2013-2017**     **Postdoctoral Scholar**, *Quality Talk: Developing students' discourse to promote critical-analytic thinking, epistemic cognition, and high-level comprehension*, funded by the Institute of Education Sciences.

## Peer-Reviewed Publications

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### Journal Articles

\* Indicates doctoral student at time of publication acceptance

+ Indicates former doctoral student with earned Ph.D. at time of publication acceptance

21. Murphy, P. K., Greene, J. A., **Firetto, C. M.**, Croninger, R. M. V.\*, Duke, R. F.\*, Li, M.<sup>+</sup>, Lobczowski, N. G.<sup>+</sup> (2022). Examining the effects of Quality Talk discussions on 4th- and 5th-grade students' high-level comprehension of text. *Contemporary Educational Psychology*, 71. <https://doi.org/10.1016/j.cedpsych.2022.102099>
20. Starrett, E.\*, **Firetto, C. M.**, & Jordan, M. E. (2022). Navigating sources of teacher uncertainty: Exploring teachers' collaborative discourse when learning a new instructional approach. *Classroom Discourse*, 1-24. <https://doi.org/10.1080/19463014.2021.2013266>
19. **Firetto, C. M.**, Van Meter, P. N., Kottmeyer\*, A. M., Turns, S. R., & Litzinger, T. A. (2021). An extension of the Thermodynamics Conceptual Reasoning Inventory (TCRI): Measuring undergraduate students' understanding of introductory thermodynamics concepts. *International Journal of Science Education*, 43(15), 2555-2576. <https://doi.org/10.1080/09500693.2021.1975847>
18. Wei, L.<sup>+</sup>, **Firetto, C. M.**, Duke, R. F.\*, Greene, J. A., & Murphy, P. K. (2021). High school students' epistemic cognition and argumentation practices during small-group Quality Talk discussions in science. *Education Sciences*, 11(10), 616. <https://doi.org/10.3390/educsci11100616>

17. Lobczowski, N. G.<sup>+</sup>, Allen, E. M.\*, **Firetto, C. M.**, Greene, J. A., & Murphy, P. K. (2020). An exploration of social regulation of learning during scientific argumentation discourse. *Contemporary Educational Psychology*, 63, 1-17. <https://doi.org/10.1016/j.cedpsych.2020.101925>
16. Murphy, P. K., Ebersöhn, L., Omidire, M. F., & **Firetto, C. M.** (2020). Exploring the structure and content of discourse in remote, rural South African classrooms. *South African Journal of Education*, 40(2), 1-11. <http://dx.doi.org/10.15700/saje.v40ns2a1826>
15. **Firetto, C. M.**, Murphy, P. K., Greene, J. A., Li, M.\*, Wei, L.\*, Montalbano, C.\*, Hendrick, B.\*, & Croninger, R. M. V.\* (2019). Bolstering students' written argumentation by refining an effective discourse intervention: Negotiating the fine line between flexibility and fidelity. *Instructional Science*, 47, 181-214. <https://doi.org/10.1007/s11251-018-9477-x>
14. Wei, L.\*, **Firetto, C. M.**, Murphy, P. K., Li, M.\*, Greene, J. A., & Croninger, R. M. V.\* (2019). Facilitating fourth-grade students' written argumentation: The use of an argumentation graphic organizer. *The Journal of Educational Research*, 112(5), 627-639. <https://doi.org/10.1080/00220671.2019.1654428>
13. **Firetto, C. M.**, & Van Meter, P. N. (2018). Inspiring integration in college students reading multiple biology texts. *Learning and Individual Differences*, 65, 123-134. <https://doi.org/10.1016/j.lindif.2018.05.011>
12. Kosh, A. E.\*, Greene, J. A., Murphy, P. K., Burdick, H., **Firetto, C. M.**, & Elmore, J. (2018). Automated scoring of students' small-group discussions to assess reading ability. *Educational Measurement: Issues and Practice*, 37(2), 20-34. <https://doi.org/10.1111/emip.12174>
11. Murphy, P. K., Greene, J. A., **Firetto, C. M.**, Hendrick, B.\*, Li, M.\*, Montalbano, C.\*, & Wei, L.\* (2018). Quality Talk: Developing students' discourse to promote high-level comprehension. *American Educational Research Journal*, 55(5), 1113-1160. <https://doi.org/10.3102/0002831218771303>
10. Wei, L.\*, Murphy, P. K., & **Firetto, C. M.** (2018). How can teachers facilitate productive small-group talk? An integrated taxonomy of teacher discourse moves. *Elementary School Journal*, 118(4), 578-609. <https://doi.org/10.1086/697531>
9. Murphy, P. K., Greene, J. A., **Firetto, C. M.**, Li, M.\*, Lobczowski, N. G.\*, Duke, R. F.\*, Wei, L.\*, & Croninger, R. M. V.\* (2017). Exploring the influence of homogeneous versus heterogeneous grouping on students' text-based discussions and comprehension. *Contemporary Educational Psychology*, 51, 336-355. <https://doi.org/10.1016/j.cedpsych.2017.09.003>

8. **Firetto, C. M.**, Van Meter, P. N., Turns, S. R., & Litzinger, T. A. (2016). The validation of a conceptual reasoning inventory for introductory thermodynamics. *International Journal of Engineering Education*, 32(6), 2635-2652. [http://www.ijee.ie/latestissues/Vol32-6/25\\_ijee3340ns.pdf](http://www.ijee.ie/latestissues/Vol32-6/25_ijee3340ns.pdf)
7. Alexander, P. A., Dumas, D., Grossnickle, E. M., List, A., & **Firetto, C. M.** (2016). Measuring relational reasoning. *The Journal of Experimental Education*, 84(1), 119-151. <https://doi.org/10.1080/00220973.2014.963216>
6. Li, M.\*, Murphy, P. K., Wang, J.\*, Mason, L. H., **Firetto, C. M.**, Wei, L.\*, & Chung, K. S.\* (2016). Promoting reading comprehension and critical-analytic thinking: A comparison of three approaches with fourth and fifth graders. *Contemporary Educational Psychology*, 46, 101-115. <https://doi.org/10.1016/j.cedpsych.2016.05.002>
5. Murphy, P. K., Andiliou, A., **Firetto, C. M.**, Bowersox, C. M., Baker, M., & Ramsay, C. M. (2016). Intratextual persuasive messages as catalysts for higher-order thinking: An exploratory investigation. *Journal of Literacy Research*, 48(2), 134-163. <https://doi.org/10.1177/1086296X16660652>
4. Murphy, P. K., **Firetto, C. M.**, Wei, L.\*, Li, M.\*, & Croninger, R. M. V.\* (2016). What REALLY works: Optimizing classroom discussions to promote comprehension and critical-analytic thinking. *Policy Insights from Behavioral and Brain Science*, 3(1), 27-35. <https://doi.org/10.1177/2372732215624215>
3. Van Meter, P. N., **Firetto, C. M.**, Turns, S. R., Litzinger, T. A., Cameron, C. E.\*, & Shaw, C. W.\* (2016). Improving students' conceptual reasoning by prompting cognitive operations. *Journal of Engineering Education*, 105(2), 245-277. <https://doi.org/10.1002/jee.20120>
2. Li, M.\*, Murphy, P. K., & **Firetto, C. M.** (2014). Examining the effects of text genre and structure on fourth- and fifth-grade students' high-level comprehension as evidenced in small-group discussions. *International Journal of Educational Psychology*, 3(3), 205-234. <http://dx.doi.org/10.4471/ijep.2014.12>
1. Litzinger, T. A., Van Meter, P. N., **Firetto, C. M.**, Passmore, L. J., Masters, C. B., Turns, S. R., Gray, G. L., Costanzo, F., & Zappe, S. E. (2010). A cognitive study of problem solving in statics. *Journal of Engineering Education*, 99(4), 337-353. <https://doi.org/10.1002/j.2168-9830.2010.tb01067.x>

## **Editorially-Reviewed Publications**

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### ***Journal Articles***

1. Murphy, P. K., **Firetto, C. M.**, & Greene, J. A. (2017). Enriching students' scientific thinking through relational reasoning: Seeking evidence in texts, tasks, and talk. *Educational Psychology Review*, 29(1), 105-117. <https://doi.org/10.1007/s10648-016-9387-x>

### **Essays**

1. Van Meter, P. N., **Firetto, C. M.**, Turns, S. R., Litzinger, T. A., Cameron, C. E.\*, & Shaw, C. W.\* (2016). Right side of the law: A non-traditional thermodynamics assignment offers a model for teaching engineering fundamentals. *ASEE Prism*, 26(1), 41. [Invited essay based on the 2016 *Journal of Engineering Education* publication, highlighted in the section JEE Selects] Available at <http://www.asee-prism.org/jee-selects-4/>

### **Book Chapters**

8. **Firetto, C. M.** (2020). Learning from multiple complementary perspectives: A systematic review. In P. Van Meter, A. List, D. Lombardi, & P. Kendeou (Eds), *Handbook of learning from multiple perspectives and representations* (pp. 223-244). Routledge.
7. Murphy, P. K., & **Firetto, C. M.** (2018). Quality Talk: A blueprint for productive talk. In P. K. Murphy (Ed.), *Classroom discussions in education* (pp. 101-133). Routledge.
6. Murphy, P. K., **Firetto, C. M.**, & Li, M.\* (2017). Knowledge and the Model of Domain Learning. In H. Fives & D. Dinsmore (Eds.), *The Model of Domain Learning: Understanding the development of expertise* (pp. 19-36). Routledge.
5. Murphy, P. K., **Firetto, C. M.**, Li, M.\*, Wei, L.\*, & Croninger, R. M. V.\* (2017). Fostering student writing through intervention research: An examination of key components. In R. Fidalgo & T. Olive (Series Eds.) & R. Fidalgo, K. R. Harris, & M. Braaksma, (Vol. Eds.), *Studies in Writing Series: Vol. 34., Design principles for teaching effective writing*, (pp. 253-279). Brill. [https://doi.org/10.1163/9789004270480\\_012](https://doi.org/10.1163/9789004270480_012)
4. Murphy, P. K., Wilkinson, I. A. G., Soter, A. O. & **Firetto, C. M.** (2017). Instruction based on discussion. In R. E. Mayer & P. A. Alexander (Eds.), *Handbook of research on learning and instruction* (2<sup>nd</sup> ed, pp. 432-459). Routledge.
3. Murphy, P. K., **Firetto, C. M.**, & Long, V. A.\* (2015). Harnessing the power of knowledge and beliefs in teaching and learning: Interventions that promote change. In D. Scott & E. Hargreaves (Eds.), *The SAGE handbook of learning* (pp. 388-403). SAGE Publications.
2. Van Meter, P. N., & **Firetto, C. M.** (2013). Cognitive Model of Drawing Construction: Learning through the construction of drawings. In G. J. Schraw, M. T. McCrudden, & D. R. Robinson (Eds.), *Learning through visual displays* (pp. 247-280). Information Age Publishing.
1. Van Meter, P. N., & **Firetto, C. M.** (2008). Intertextuality and the study of new literacies: Research critique and recommendations. In J. Coiro, M. Knobel, C. Lankshear, & D. J. Leu (Eds.), *Handbook of research on new literacies* (pp. 1079-1092). Routledge.

### **Encyclopedia Entries**

2. Murphy, P. K., **Firetto, C. M.**, Lloyd, G. M., Wei, L., & Baszczewski, S. E.\* (2020). Classroom discussions. In L. Zhang (Ed.) *Oxford Research Encyclopedia of Education*. Oxford University Press. <http://dx.doi.org/10.1093/acrefore/9780190264093.013.869>

1. **Firetto, C. M., & Murphy, P. K.** (2019). Metacognition. In J. S. Damico & M. J. Ball (Eds.), *The SAGE encyclopedia of human communication sciences and disorders*. SAGE.

## Digital Media

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### *Blogs*

1. Murphy, P. K., & **Firetto, C. M.** (2015, March 4). Swinging for the fences: Education interventions make a difference for learners. *Psychology Today*.  
<https://www.psychologytoday.com/blog/psyched/201503/swinging-the-fences/>

### *Video Production and Digital Materials*

4. **Firetto, C. M., & Starrett, E.** (2022). *Engaging in small group study discussions* [Infographic]. DOI [10.17605/OSF.IO/9VTSW](https://doi.org/10.17605/OSF.IO/9VTSW) [infographic created for use in research and disseminated for public use]
3. Starrett, E., & **Firetto, C. M.** (2022). *Cooperative study strategies* [Video].  
<https://www.youtube.com/watch?v=JHA-Fw0kUto> [video created for use in research and disseminated for public use]
2. Murphy, P. K., Greene, J. A., & **The Quality Talk Team.** (2016). *Quality Talk language arts engagement* [Video]. Institute of Education Sciences.  
<http://www.qualitytalk.psu.edu/2014/03/18/qtlanguagearts>
1. Murphy, P. K., Greene, J. A., & **The Quality Talk Team.** (2015). *Promoting Quality Talk in high school STEM classes* [Video]. Teaching and Learning Video Showcase, The National Science Foundation. <http://videohall.com/p/532>

### *Technical Reports and Coding Manuals*

8. **Firetto, C. M.** (2023). *Annual evaluation report* [Unpublished report]. NSF IUSE Award #1912415.
7. **Firetto, C. M.** (2021). *Annual evaluation report* [Unpublished report]. NSF IUSE Award #1912415.
6. Murphy, P. K., **Firetto, C. M.,** Greene, J. A., & Butler, A. M. (2017). *Analyzing the talk in Quality Talk discussions: A coding manual*. The Pennsylvania State University.  
[doi.org/10.18113/S1XW64](https://doi.org/10.18113/S1XW64)
5. Murphy, P. K., Greene, J. A., & **Firetto, C. M.** (2018). *Quality Talk: Developing students' discourse to promote critical-analytic thinking, epistemic cognition, and high-level comprehension* (Unpublished report). The Pennsylvania State University.
4. Murphy, P. K., Greene, J. A., & **Firetto, C. M.** (2017). *Quality Talk: Developing students' discourse to promote critical-analytic thinking, epistemic cognition, and high-level comprehension* (Unpublished report). The Pennsylvania State University.

3. Murphy, P. K., Greene, J. A., & **Firetto, C. M.** (2016). *Quality Talk: Developing students' discourse to promote critical-analytic thinking, epistemic cognition, and high-level comprehension* (Unpublished report). The Pennsylvania State University.
2. Murphy, P. K., Greene, J. A., & **Firetto, C. M.** (2015). *Quality Talk: Developing students' discourse to promote critical-analytic thinking, epistemic cognition, and high-level comprehension* (Unpublished technical report). The Pennsylvania State University.
1. Murphy, P. K., Greene, J. A., & **Firetto, C. M.** (2014). *Quality Talk: Developing students' discourse to promote critical-analytic thinking, epistemic cognition, and high-level comprehension* (Unpublished report). The Pennsylvania State University.

## Grant Applications

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### ***Funded***

4. **Firetto, C. M.** (PI), Patton, L. (Co-PI), Oliver, J., (Co-PI) & Yan, L. (Co-PI). (2022-2023). Supporting teacher candidates' understanding of ethical educational assessments through equity-focused, small-group discussions. Sponsor: *Mary Lou Fulton Teachers College Internal Scholarship Grant* (competitive). (Award: \$14,949).
3. **Firetto, C. M.** (PI). (2020-2021). Exploring active learning exercises in introductory anatomy and physiology courses. Sponsor: *Mary Lou Fulton Teachers College Internal Scholarship Grant* (competitive). (Award: \$7,787).
2. **Firetto, C. M.** (PI), Hyatt, J. P. (Co-PI), Kingsbury, J. (Co-PI), & Penkrot, T. (Co-PI). (2020-2021; No-Cost Extension to 2023). Leveraging collaborative in-class learning exercises (CICLES) to promote a deeper understanding of anatomy and physiology. Sponsor: *Institute for Social Science Research at Arizona State University* (competitive). (Award: \$8,000).
1. **Firetto, C. M.** (PI), Hyatt, J. P. (Co-PI), Kingsbury, J. (Co-PI), & Penkrot, T. (Co-PI). (2018-2019). Supporting undergraduate students' construction of an integrated understanding of anatomy and physiology. Sponsor: *Mary Lou Fulton Teachers College Internal Scholarship Grant* (competitive). (Award: \$13,525).

### ***Unfunded***

7. Rillero, P. (PI), & **Firetto, C. M.** (Sr. Personnel). (2020). Growing healthy foods: Sustainability, nutrition, stewardship, and education through school-based, small-area, raised-bed, irrigated farm systems. Sponsor: *USDA: National Institute of Food and Agriculture*. USDA-NIFA-FASLP-007292. (Requested: \$198,066; Firetto's Recognition: \$59,420).
6. **Firetto, C. M.** (PI). (2018). Supporting undergraduate biology students' higher order cognitive skills using discussion to promote deep conceptual understanding. Sponsor: National Academy of Education: *Postdoctoral Fellowship*. (Total Requested: \$70,001).

5. Murphy, P. K. (PI), & **Firetto, C. M.** (Co-PI). (2018). Refining Quality Talk Science to promote professional vision and leadership of STEM teachers in high-need high schools. Sponsor: *National Science Foundation, DRK-12*. (Total Requested: ~\$3,000,000; ASU Subcontract: \$380,291).
4. Murphy, P. K. (PI), **Firetto, C. M.** (Co-PI), & Greene, J. A. (Co-PI). (2018). Exploring the influence of homogeneous versus heterogeneous grouping on students' cognitive engagement, comprehension, and epistemic cognition. Sponsor: *US Department of Education: Institute of Education Sciences, Goal 1*. (Total Requested: ~\$1,400,000; ASU Subcontract: \$202,601).
3. **Firetto, C. M.** (PI). (2018). Exploring undergraduate multiple-text integration and sourcing with componential texts in an undergraduate biology course. Sponsor: American Psychological Association Division 15: *Early Career Research Grant*. (Total Requested: \$5,921).
2. Murphy, P. K. (PI), & **Firetto, C. M.** (Co-PI). (2017). Adapting Quality Talk Science to bolster teachers' STEM pedagogy with struggling learners in high-need high schools. Sponsor: *National Science Foundation, DRK-12*. (Total Requested: ~\$3,000,000; ASU Subcontract: \$380,922).
1. Murphy, P. K. (PI), **Firetto, C. M.** (Co-PI), & Greene, J. A. (Co-PI). (2017). Exploring the influence of homogeneous versus heterogeneous grouping on students' discussion engagement, comprehension, and epistemic cognition. Sponsor: *US Department of Education: Institute of Education Sciences, Goal 1*. (Total Requested: ~\$1,400,000; ASU Subcontract: \$202,886).

## Conference Presentations

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### *Peer-Reviewed, International*

11. **Firetto, C. M.** (2021, July 7-9). Examining teachers' critical-analytic thinking and discussion efficacy after participating in content discussions: A follow-up study. In P. K. Murphy (Chair), *Leveraging teacher-researcher collaborations to support students' critical-analytic thinking through discussion* [Symposium]. World Education Research Association (WERA), virtual/Santiago De Compostela, Spain.
10. Murphy, P. K., Greene, J. A., & **Firetto, C. M.** (2017, July 11-15). *Using Quality Talk Language Arts to enhance fifth-grade students' argumentation and writing*. In M. McKeown & A. Crosson (Chairs), *Exploring intervention effects on students' argument writing* [Symposium]. Society for the Scientific Study of Reading Annual Meeting, Halifax, Nova Scotia. <https://www.triplesr.org/exploring-intervention-effects-students%E2%80%99-argument-writing>

9. **Firetto, C. M.**, Murphy, P. K., Greene, J. A., Li, M.\*, Wei, L.\*, & Montalbano, C.\* (2015, August 25-29). *Enhancing students' written argumentation through Quality Talk*. European Association for Research on Learning and Instruction (EARLI), Limassol, Cyprus. <https://earli.org/assets/files/BOA-2015.pdf>
8. Li, M.\*, **Firetto, C. M.**, Murphy, P. K., Greene, J. A., Wei, L.\*, Croninger, R. M. V.\*, & Montalbano, C.\* (2015, August 6-9). *Examining the transfer effects of Quality Talk on fourth graders' written argumentation*. American Psychological Association (APA) Annual Convention, Toronto, Canada.
7. **Firetto, C. M.**, & Van Meter, P. N. (2013, August 27-31). *Cognitive Model of Drawing Construction: Using think alouds to measure cognitive processes*. European Association for Research on Learning and Instruction (EARLI), Munich, Germany. <https://earli.org/assets/files/BOA-2013.pdf>
6. Van Meter, P. N., & **Firetto, C. M.** (2013, August 27-31). *What can drawings tell us about drawing to learn?*. European Association for Research on Learning and Instruction (EARLI), Munich, Germany. <https://earli.org/assets/files/BOA-2013.pdf>
5. **Firetto, C. M.**, & Van Meter, P. N. (2012, August 29-31). *The effect of task instruction and text overlap on the integration of multiple cross-domain sources*. Text and Graphics Special Interest Group of the European Association for Research on Learning and Instruction (EARLI), Grenoble, France.
4. **Firetto, C. M.**, & Van Meter, P. N. (2011, August 30-September 3). *Effects of drawing and diagram selection on learning from multiple representations in biology*. European Association for Research on Learning and Instruction (EARLI), Exeter, UK. <https://earli.org/assets/files/BOA-2011.pdf>
3. Shull, P., **Firetto, C. M.**, & Passmore, L. (2011, June 26-29). *Improved team function: Student-driven team rules and consequences*. American Society for Engineering Education (ASEE) Conference and Exposition, Vancouver, Canada.
2. Van Meter, P. N., **Firetto, C. M.**, & Litzinger, T. A. (2008, August 27-29). *Solving engineering problems using multiple representations: Differences between strong and weak problem solvers*. Text and Graphics Special Interest Group of the European Association for Research on Learning and Instruction (EARLI), Tilburg University, Netherlands.
1. Litzinger, T. A., Van Meter, P. N., **Firetto, C. M.**, Passmore, L., Masters, C., Costanzo, F., Gray, G., Turns, S.R., & Higley, K. (2008, July 7-10). *A cognitive study of problem-solving in statics*. Research in Engineering Education Symposium, Davos, Switzerland.



***Peer-Reviewed, National***

31. **Firetto, C. M.**, Starrett, E.\*, Yan, L.\*, Hyatt, J.-P., & Penkrot, T. (2023, April 13-16). *Promoting collaborative study strategy use with biology undergraduate students*. American Educational Research Association (AERA) Annual Meeting, Chicago, IL, United States.
30. **Firetto, C. M.**, Montalbano, A. C.<sup>+</sup>, Starrett, E.\*, Yan, L.\*, Hyatt, J.-P., & Penkrot, T. (2022, August 4-6). *A study strategy module for biology undergraduates: Uptake and impact*. American Psychological Association (APA) Annual Convention, Minneapolis, MN, United States [virtual].
29. **Firetto, C. M.**, Starrett, E.\*, Jaber, L.\*, & Kingsbury, J. (2021, October 12-15). *Using study-group discussions to promote connection generation in an introductory anatomy and physiology course*. Scholarly Consortium of Innovative Psychology in Education (SCIPIE), Tempe, AZ, United States [virtual].
28. Primor, L.<sup>+</sup>, **Firetto, C. M.**, Katzir, T., & Yeari, M. (2021, July 12-16). *Exploring the impact of reading single vs. multiple texts on integration synthesis tasks and the underexamined role of topic*. Society for the Scientific Study of Reading (SSSR) Conference, virtual.
27. **Firetto, C. M.** (2021, April 8-12). *Embedding authentic discussions in professional development to promote science teachers' discussion competency and enactment*. American Educational Research Association (AERA) Annual Meeting, virtual.
26. **Firetto, C. M.**, Hyatt, J.-P. K., Kingsbury, J., & Penkrot, T. A. (2020, August 6-9). *Using in-class learning activities to promote integration strategy use*. American Psychological Association (APA) Annual Convention, Washington, DC, United States [virtual]. DOI [10.17605/OSF.IO/K2DHU](https://doi.org/10.17605/OSF.IO/K2DHU)
25. **Firetto, C. M.** (2020, April 17-21). *Leveraging teacher-researcher collaborations to support students' critical-analytic thinking through discussion* [Symposium/Discussant]. American Educational Research Association (AERA) Annual Meeting, San Francisco, CA, United States. (Conference Canceled).
24. **Firetto, C. M.** (2020, April 17-21). Building teachers' critical-analytic thinking and discussion efficacy through content discussions. In C. Firetto (Chair), *Leveraging teacher-researcher collaborations to support students' critical-analytic thinking through discussion* [Symposium]. American Educational Research Association (AERA) Annual Meeting, San Francisco, CA, United States. (Conference Canceled).
23. **Firetto, C. M.**, & Mulhearn, S. C.\* (2018, August 9-12). *The influence of text format on college biology students' integration: Multiple vs. single texts*. American Psychological Association (APA) Annual Convention, San Francisco, CA, United States.

22. Croninger, R. M. V.\*, Murphy, P. K., **Firetto, C. M.**, Li, M.\*, & Wei, L.\* (2018, August 9-12). *Facilitating small-group discussions across different ability groups: Effect of teacher discourse moves*. American Psychological Association (APA) Annual Convention, San Francisco, CA, United States.
21. Murphy, P. K., Greene, J. A., **Firetto, C. M.**, Li, M.\*, Duke, R. F.\*, Croninger, R. M. V.\*, & Lobczowski, N. G.\* (2018, April 13-17). *Promoting students' multifaceted literacy competence through Quality Talk: A quasi-experimental study*. American Educational Research Association (AERA) Annual Meeting, New York, NY, United States.
20. Murphy, P. K., **Firetto, C. M.**, & Li, M.\* (2018, April 13-17). *Knowledge and the MDL: What we knew, what we know, and what remains unknown*. American Educational Research Association (AERA) Annual Meeting, New York, NY, United States.
19. Allen, E.\*, Montalbano, C.\*, Greene, J. A., Murphy, P. K., Butler, A. M., **Firetto, C. M.**, & Wei, L.\* (2017, August 3-6). *The effects of Quality Talk on STEM relational reasoning*. American Psychological Association (APA) Annual Convention, Washington, DC, United States.
18. Li, M.\*, Murphy, P. K., **Firetto, C. M.**, & Wei, L.\* (2017, August 3-6). *Effects of text and learner characteristics on the acquisition of high-level comprehension*. American Psychological Association (APA), Annual Convention, Washington, DC, United States.
17. Montalbano, C.\*, Allen, E.\*, Greene, J. A., Murphy, P. K., **Firetto, C. M.**, & Wei, L.\* (2017, August 3-6). *Investigating changes in relational reasoning in small-group discourse over time and across ability groups*. American Psychological Association (APA), Washington, DC, United States.
16. Wei, L.\*, **Firetto, C. M.**, Murphy, P. K., Li, M.\*, & Croninger, R. M. V.\* (2017, April 27-May 1). *The effect of using a graphic organizer on fourth graders' argumentative writing*. American Educational Research Association (AERA) Annual Meeting, San Antonio, TX, United States.
15. **Firetto, C. M.**, Murphy, P. K., Greene, J. A., Li, M.\*, Wei, L.\*, Montalbano, C.\*, Hendrick, B.\*, & Croninger, R. M. V.\* (2016, April 8-12). *Using Quality Talk to foster transfer of students' critical-analytic discussions to their argumentative writing*. American Educational Research Association (AERA) Annual Meeting, Washington, DC, United States.
14. Greene, J. A., Murphy, P. K., Butler, A., **Firetto, C. M.**, Allen, E. M.\*, Wang, J.\*, Wei, L.\*, & Yu, S.\* (2016, April 8-12). *Fostering relational reasoning and scientific understanding through Quality Talk discourse*. In D. Dumas (Chair), *The malleability of relational reasoning: Effects of direct or indirect interventions on learning processes and outcomes* [Symposium]. American Educational Research Association (AERA) Annual Meeting, Washington, DC, United States.

13. Kosh<sup>+</sup>, A. E., Greene, J. A., Murphy, P. K., Burdick, H., & **Firetto, C. M.** (2016, April 7-11). *Measuring reading comprehension through automated analysis of students' small-group discussions*. National Council on Measurement in Education (NCME) Annual Meeting, Washington, DC, United States.
12. Murphy, P. K., Greene, J. A., **Firetto, C. M.**, Hendrick, B.\*, Montalbano, C.\*, Li, M.\*, & Wei, L.\* (2016, April 8-12). *Enhancing students' comprehension and critical-analytic thinking through Quality Talk discussions*. American Educational Research Association (AERA) Annual Meeting, Washington, DC, United States.
11. Murphy, P. K., Greene, J. A., **Firetto, C. M.**, Li, M.\*, Lobczowski, N. G.\*, Croninger, R. M. V.\*, & Duke, R. F.\* (2016, April 8-12). Examining the effect of homogeneous and heterogeneous grouping in classroom discourse. In L. Ebersöhn (Chair), *Public scholarship to educate diverse democracies* [Symposium]. World Education Research Association (WERA), Washington, DC, United States.
10. Murphy, P. K., Greene, J. A., **Firetto, C. M.**, Montalbano, C.\*, Li, M.\*, & Wei, L.\* (2016, April 8-12). Promoting relational reasoning in elementary students' writing. In D. Dumas (Chair), *The malleability of relational reasoning: Effects of direct or indirect interventions on learning processes and outcomes* [Symposium]. American Educational Research Association (AERA) Annual Meeting, Washington, DC, United States.
9. Wei, L.\*, Murphy, P. K., & **Firetto, C. M.** (2016, April 8-12). *Toward an integrated taxonomy of teacher discourse moves in small-group, text-based discussions*. American Educational Research Association (AERA) Annual Meeting, Washington, DC, United States.
8. **Firetto, C. M.**, & Van Meter, P. N. (2015, April 16-20). *Inspiring integration in college students reading multiple biology texts*. American Educational Research Association (AERA) Annual Meeting, Chicago, IL, United States.
7. Long, V. A.\*, **Firetto, C. M.**, & Murphy, P. K. (2014, August 7-10). *Transfer effects from small group discussions of text to writing*. American Psychological Association (APA) Annual Convention, Washington, DC, United States.
6. Turns, S. R., Van Meter, P. N., **Firetto, C. M.**, & Litzinger, T. A. (2013, June 23-26). *Development of an intervention to improve students' conceptual understanding of thermodynamics*. American Society for Engineering Education (ASEE) Annual Conference and Exposition, Atlanta, GA, United States.
5. Passmore, L., Litzinger, T. A., Masters, C., Turns, S. R., Van Meter, P. N., **Firetto, C. M.**, & Zappe, S. (2010, June 20-23). *Sources of students' difficulties with couples and moments in statics*. American Society for Engineering Education (ASEE) Conference and Exposition, Louisville, KY, United States.

4. Litzinger, T. A., **Firetto, C. M.**, Van Meter, P. N., Passmore, L., Masters, C., Turns, S. R., & Zappe, S. (2009, June 14-17). *Improving students' ability to model during problem-solving in statics*. Presented at the annual conference and exposition of the American Society for Engineering Education, Austin, TX, United States.
3. Litzinger, T. A., **Firetto, C. M.**, Van Meter, P. N., Passmore, L., Masters, C., & Higley, K. (2008, June 22-25). *Identifying and remediating difficulties with problem-solving in statics*. American Society for Engineering Education (ASEE) Annual Conference and Exposition, Pittsburgh, PA, United States.
2. **Firetto, C. M.**, & Van Meter, P. N. (2008, March 24-28). *The effects of surface features and readers' goals on intertextuality*. American Educational Research Association (AERA) Annual Meeting, New York, NY, United States.
1. Van Meter, P. N., **Firetto, C. M.**, & Higley, K. (2007, April 9-13). The integration of representations: A program of research for academic development. In P. A. Alexander (Chair), *The roles of perception, cognition, emotion, and social factors in academic development* [Symposium]. American Educational Research Association (AERA) Annual Meeting, Chicago, IL, United States.

#### ***Invited, External Audience***

4. **Firetto, C. M.** (2021, February 26). *Exploring active learning exercises in introductory anatomy and physiology courses* [Invited presentation]. Teachers College Doctoral Council (TCDC) Education Research Conference, virtual.
3. **Firetto, C. M.** (2021, February 17). *Formative assessment for reflective practice* [Panel member]. Partnership between ASU and the U.S. Embassy, virtual.  
<https://www.youtube.com/watch?v=HLg24dnvYXw>
2. Murphy, P. K., Greene, J. A., & Firetto, C. M. (2016, December). A quantitative and qualitative examination of homogeneous and heterogeneous grouping in classroom discourse [Presentation]. Institute of Education Sciences Annual Principal Investigators Meeting, Washington, DC, United States.
1. Murphy, P. K., Greene, J. A., & **Firetto, C. M.** (2015, December). *Quasi-experimental evidence of the efficacy of Quality Talk's effects upon fifth-grade students' argumentation skills* [Presentation]. Institute of Education Sciences Annual Principal Investigators Meeting, Washington, DC, United States.

#### ***Invited, Internal Audience***

8. **Firetto, C. M.** (2021, October). *Supporting learners' high-level comprehension of text-based content through tasks and talk* [Invited presentation]. MLFTC Ph.D. Transdisciplinary Seminar, Arizona State University.

7. **Firetto, C. M.** (2018, November). *Transdisciplinary research panel* [Collaborative research presentation]. MLFTC All-College Meeting, Tempe, AZ, United States.
6. **Firetto, C. M.** (2018, March). *How'd they do that? Advice from early career colleagues with grant writing experience* [Panel Member]. Junior Faculty Development Workshop, Tempe, AZ, United States.
5. Murphy, P. K., Greene, J. A., **Firetto, C. M.**, & Butler, A. M. (2016, October). *Using Quality Talk to enhance high-level comprehension in science and language arts* [Presentation]. Research Penn State 2016: Materials Day Reinvented at the Pennsylvania State University, University Park, PA, United States.
4. Li, M.\*, **Firetto, C. M.**, Murphy, P. K., Greene, J. A., Wei, L.\*, Croninger, R. M. V.\*, & Montalbano, C.\* (2015, November). *Examining the transfer effects of Quality Talk on fourth graders' written argumentation* [Presentation]. Science of Learning Poster Conference at the Pennsylvania State University, University Park, PA, United States.
3. **Firetto, C. M.**, & Murphy, P. K. (2015, August). *Facilitating effective small-group discussions* [Invited presentation]. CHEM 110 Teaching Assistants in Training at the Pennsylvania State University, University Park, PA, United States.
2. Wei, L.\*, Murphy, P. K., & **Firetto, C. M.** (2015, February). *Toward an integrated taxonomy of teacher moves in text-based small-group discussions* [Presentation]. Graduate Student Research Symposium at the Pennsylvania State University, University Park, PA, United States.
1. Van Meter, P. N., & **Firetto, C. M.** (2013, November). *Myths about how students learn in STEM courses* [Invited presentation]. Mathematics Teaching Group and Center for Excellence in Science Teaching, Pennsylvania State University, University Park, PA, United States. <https://meeting.psu.edu/p7ab3x59vg1/>

### **Awards for Scholarship**

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Mary Lou Fulton Teachers College – Promising Research Scholar 2021

### **Academic Leadership in Scholarship**

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#### Editorship

- *Contemporary Educational Psychology* (Associate Editor) 2022-Present
- *SAGE Open* (Editor) 2015-Present

#### Expertise on National Science Foundation (NSF) Grants

- *Educational Consultant and Contributor* - Sarah Zappe (PI); Workshop: Building a Framework to Understand the Impact of Entrepreneurship Support Programs (ESP) on the Formation of Engineers (NSF EEC# 2220329) 2023-Present

- *Advisory Board Member* - Alexander De Rosa (PI); Research Initiation: Facilitating Knowledge Transfer within Engineering Curricula (NSF PFE-RIEF #2301341) 2022-Present
- *External Evaluator* - P. Karen Murphy (PI); Enhancing Teacher Preparation in Elementary Mathematics through a Research-based Framework for Teacher-facilitated Discussions (NSF IUSE Award # 1912415) 2020-Present

## Teaching (Lead Instructor)

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\* denotes doctoral student co-teaching or mentoring opportunity.

**Assistant Professor of Educational Psychology**, Arizona State University.

TEL 318: Instructional Thought & Action: Assessment for Learning

Prospective educators examine theories of assessments exploring why we assess, how we assess, and the ways assessments are interpreted in classroom settings. Emphasizes designing, selecting, implementing, and/or evaluating appropriate assessments specific to pathways and for students with diverse educational needs across all grade levels.

Spring 2023\*  
Fall 2022

TEL 504: Learning and Instruction

Introduces psychology of learning and instruction. Includes the foundations of learning theories and their application to educational practice.

Spring 2023  
Spring 2022  
Spring 2021  
Spring 2018

EDP 310: Educational Psychology for Non-Teachers, Motivation

Human behavior in educational situations. Individual differences, factors affecting learning, behavioral and cognitive learning, motivation, testing, and assessment.

Summer 2022  
Summer 2021  
Summer 2019

EDP 311: Educational Psychology for Future Teachers

Planning and conducting effective instruction based on learning theories and principles. This course specifically addresses student learning. We examine beliefs about how students learn, how to assess students learning, and the processes of motivation that initiate and sustain student learning. This course also exposes prospective teachers to the practice of teacher inquiry; how can teachers examine and reflect upon their current teaching practices, and using data and research, create positive learning environments for their students.

Spring 2022  
Fall 2021\* (2x)  
Spring 2021  
Fall 2020\* (2x)  
Spring 2020\*  
Fall 2019 (2x)  
Fall 2018 (2x)  
Fall 2017

EDP 313: Childhood and Adolescence

Principles underlying total development of pre- and early-adolescent children. Emphasizes physical, intellectual, social, and emotional development with practical implications for teachers. Meets ADE requirement for one course in early adolescent psychology. Summer 2018

TEL 215: Introduction to Child & Adolescent Development

Emphasizes the cognitive, social-emotional, and physical domains of child and adolescent development. From a knowledge base of theory, research, and current issues, students apply learning to developmentally appropriate principles and practices that guide relationships and learning experiences for all children. Uses available technologies; emphasizes the complex ecosystem of culture, ethnicity, family, and school. Spring 2018

**Adjunct Faculty**, Bucknell University.

EDUC 201: Educational Psychology

This is a required course for all certification students and involves observation of teachers and classrooms in local schools and associated assignments. Spring 2011 (2x)  
Fall 2010 (2x)

**Course Instructor**, The Pennsylvania State University.

EDPSY 297B: Learning in STEM

This 2-credit course is offered as part of the Millennium Scholars program in the Eberly College of Science and College of Engineering. It is designed to enable beginning first year science and engineering undergraduate students to become more effective scientists/engineers in training by strengthening their understanding of key components that facilitate learning various material—from the simple to the complex. Specifically, students will learn about factors that affect their academic performances and will be guided to learn specific strategies to enhance learning and performance. Summer 2013

EDPSY 010: Individual Differences and Education

This course is an overview of the major theories and significant research on the development and explanation of individual differences and how those differences affect the education of school-age children. Specific topics include physical, cognitive, language, social-emotional, and cultural development in children and youth ages 3-20. By its very nature, the course will include a diversity focus, with special attention to ethnic, cultural, and gender issues as well as the needs of special populations... Fall 2011

## EDPSY 014: Learning and Instruction

This introduction to educational psychology provides students with an understanding of the major concepts, principles and theories, and related research of learning and teaching. The research on learning and teaching is a primary emphasis, with clear connections made to diverse real-world contexts such as home, family life, informal and formal teaching and learning settings...

Summer 2010  
Summer 2009  
Summer 2008

## **Teaching (Course Coordination and Curriculum Design)**

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### ***TEL 318: Instructional Thought & Action: Assessment for Learning***

- Course Coordinator (2022-Present)
  - Facilitated a weekly (FA 2022) or monthly (SP 2023) community of practice
  - Supported 8 faculty across 10 sections in its second implementation (SP 2023)
  - Supported 19 faculty across 24 sections in its first implementation (FA 2022)
  - Created and shared slides to guide faculty in teaching the course
- Course refinements for enhanced implementation across pathways (2022)
- Co-led development of new course (2021)
  - Co-designed Common Assessments and associated rubrics (2021)
  - Identified all online course learning content, designed all online course activities, and outlined in-class activities (designed for both Hybrid Face-to-Face and Hybrid Sync modalities)
  - Designed 3-part pathway projects for both EED and SED pathways (2021), began merging of pathway projects to increase flexibility (2023)
  - Course syllabus development, including description and objectives (2020)
- Course refinements for enhanced implementation across pathways (2022)
- Estimated annual impact on over 800 ASU students and future teachers

### ***TEL 504: Learning and Instruction***

- Course Coordinator: Gifted Education Section (2021-2022)
- Full redesign of online course (2021) after a minor update (2020)
  - Refined, clarified, and streamlined (2022)
  - Redesign with all new readings, activities, and Yellowdig discussions (2021)
  - Updated major assignments as part of Gifted Education Capstone (2021)

### ***EDP 310: Educational Psychology for Non-Teachers (1-credit)***

- Course Lead; Motivation (2021-2022)
  - *Summer 2021* – Led 7 co-instructors; 188 students
  - *Summer 2020* – Led 8 co-instructors; 180 students
  - *Summer 2019* – Led 6 co-instructors; 175 students
- Full redesign of online Motivation course (2020-2021)
  - Refined, clarified, and streamlined (2021)
  - Redesign with all new readings, activities, and Yellowdig discussions (2020)
- Evaluation of all EDP 310 sections (2019, 2020)



### ***EDP 311: Educational Psychology for Future Teachers***

- Course Coordinator (2021-2022)
- Co-developed and refined the online version (2019-2022)
  - Led a “super section” of 5 faculty teaching 137 students
- Developed the Jumpstart Academy for West Paraprofessional Cohort (2019, 2020)
  - Co-designed and examined a program orientation integrating content and academic support across five faculty teaching the same cohort of students
- Taught and refined the course for implementation via 4 modalities: Face-to-Face 15 weeks, Hybrid 15 weeks, Hybrid 7.5 weeks, Online 15 weeks (2017-2022)
- Contributed to revisions of EDP 311 Signature Assignment (2017-2020)

### ***TEL 310: Instructional Thought & Action: Instructional Design and Planning***

- Co-led development of new course (2021)
  - Co-designed Common Assessments and associated rubrics (2021)
  - Identified all online course learning content, designed all online course activities, and outlined in-class activities (designed for both Hybrid Face-to-Face and Hybrid Sync modalities)
  - Course syllabus development, including description and objectives (2020)
- Estimated annual impact on approximately 800 ASU students and future teachers

### **Mentoring (Committee Membership)**

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#### ***Committee Membership, ASU***

- Chair:
  - Emily Starrett (PhD, Learning Literacies and Technology) Expected: SP 2024
  - Lin Yan (PhD, Learning Literacies and Technology) Expected: SP 2025
- Committee Member:
  - Erica Norcini (EdD, Leadership and Innovation; chair: Dorn) Exp.: SP 2023
  - Micah Watanabe (PhD, Cognitive Psychology; chair: McNamara) Exp.: SP 2023
  - Amy Collins (EdD, Leadership and Innovation; chair: Henriksen) SP 2021
  - Micah Watanabe (MS, Cognitive Psychology; chair: McNamara) SU 2020

#### ***External Committees, International***

- External Reviewer:
  - Sipikelelo Mugari (PhD, Educational Psychology at University of Pretoria, South Africa) SU 2021
  - Liron Primor (PhD, Educational Psychology at University of Haifa, Israel) SP 2020

### **Mentoring (Research Projects)**

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#### ***Graduate Students***

- Secondary Research Advisor:
  - Sarah Diaz (PhD, Educational Policy and Evaluation) FA 2018
  - Shannon Mulhearn (PhD, Learning Literacies and Technology) 2017-2018

### ***Teaching Professionals***

- Fulbright Teacher Exchange, Faculty Mentor Research Project Supervisor:
  - Shiela Niña L. Rea-Santes (Lutucan Integrated National High School) 2021
  - Wendy Goh (Tampines Meridian Junior College) 2020
  - Alana Rocha (Escola Estadual Mascarenhas Homem) 2020

### ***Undergraduate Students***

- Barrett Honors College, Enrichment Credit Supervisor:
  - TEL 215, SP 2018
  - TEL 215, SP 2018

### **Awards for Mentorship**

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[ASU Graduate College – Outstanding Instructional Faculty Mentor \(2022\)](#)

### **University, College, and Division Service (Internal)**

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#### ***Arizona State University***

- Graduate College
  - Outstanding Faculty Mentor Awards Review Committee for 2022-23
- Institute for Social Science Research
  - Seed Funding Grant Proposal Reviewer (2022)
  - Graduate Student Poster Contest Reviewer (SP 2022, FA 2022)

#### ***Mary Lou Fulton Teachers College***

- Governance and Policy Committee (Term: 2021-2024)
- LLT PhD Program Committee (Term: 2021-2024)
  - LLT Awards Subcommittee (Co-chair: 2021; Chair: 2022)
  - Student application review, recruitment, and interview process (2017-Present)
- L&I EdD student application review process (SU 2020)
- MLFTC Internal Grant Review Committee (2019, 2021)
- Search Committee
  - Gifted Education Program Co-instructor Pool (2022)

#### ***Division of Teacher Preparation (Elementary Education Program/Pathway)***

- Continuous Improvement TAG for Elementary Education (Term: 2020-Present)
  - Program Assessment Report for EED program and EED/STEM program (2020)
  - Leader of Workgroup on D1 Program Assessment Reports (2021-Present)
  - PLO Progression Level Indicator Design Team (SU 2021)
  - Common Assessment Process and Documentation Team (SU 2021)
  - Wrote brief report about MLFTC assessment use for Lisa Benton and Shelly Potts to utilize as an exemplar for the Higher Learning Commission Accreditation Report and assurance argument (SU 2022)
- D1 Redesign (2017-2022)
  - Contributed to D1 and EED Program redesign
- D1 Teaching and Scholarship Integration (Breakout Room; 1/13/23)

## Professional Service (External)

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### *Professional Service*

- American Psychological Association (APA)
  - Program Co-Chair (2020-2021) for Division 15
  - Reviewer for Division 15 Graduate Student Poster Award (2018)
  - Reviewer for APA Division 15 Proposals (2021-2023)
  - Discussion Facilitator: Collaborative Session *Applying Psychological Science to Teaching, Learning, and Well-Being in Schools* (2018)
- American Educational Research Association (AERA)
  - Reviewer for the AERA Division C Graduate Student Research Award (2016)
  - Reviewer for AERA Division C Proposals (2017-2019)
  - Session Chairperson (2017)
- National Science Foundation (NSF)
  - Discussion Facilitator: *Effective Practices for Assessment and Dissemination in Engineering Education Workshop* (2009)
  - Discussion Facilitator: *Mechanics Education Workshop*. (2009)
- Pearson Textbook Reviewer
  - Educational Psychology (2018, 2019, 2022)
  - Child Development (2019)
- Taylor and Francis handbook reviewer
  - Handbook prospectus (2019)

### *Professional Development Workshops (Delivered)*

- *How to engage in Quality Talk about science content* (May 2020). Quantum Energy and Sustainable Solar Technologies (QESST) Research Experience for Teachers (RET) summer program, Tempe, AZ, United States.
- *How to engage in Quality Talk about science content* (May 2018). Quantum Energy and Sustainable Solar Technologies (QESST) Research Experience for Teachers (RET) summer program, Tempe, AZ, United States.
- *Quality Talk in science classrooms* (2017, June). Materials Research Science and Engineering Centers Research Experience for Teachers program, University Park, PA, United States.

## Editorial Boards and Reviewer Experience

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Verified account of reviews from 2017 to present available at Web of Science:

<https://www.webofscience.com/wos/author/record/AAA-8316-2020> (select peer review tab):

### Editorial Board

- *Review of Educational Research* (44 Reviews; Board Member 2018 – Present)
- *Contemporary Educational Psychology* (44 Reviews; Board Member 2017 – 2022)

Ad Hoc Reviewer (30 total)

- *British Journal of Educational Psychology*
- *Educational Psychologist*
- *International Journal of Educational Development*
- *International Journal of STEM Education*
- *Journal of Computer Assisted Learning*
- *Journal of Educational Psychology*
- *The Journal of Educational Research*
- *Journal of Engineering Education*
- *The Journal of Experimental Education*
- *Learning and Instruction*
- *Learning and Individual Differences*

**Award for Service**

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[Outstanding Reviewer – Review of Educational Research \(2017\)](#)