

## Song A. An, Ph.D.

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### EDUCATIONAL BACKGROUND

Date	Institution	Degree Earned & Major
<b>2007 – 2012</b>	<i>Texas A&amp;M University</i> College Station, TX	Ph.D. in Curriculum & Instruction
○ Mentor:	Dr. Gerald O. Kulm	
○ Dissertation:	<i>The effects of music-mathematics integrated curriculum and instruction on elementary students' mathematics achievement and dispositions</i>	
<b>2003 – 2007</b>	<i>Nanjing Arts Institute</i> Nanjing, China	B.A. in Musicology

### PROFESSIONAL EXPERIENCES

<b>2018 – Present</b>	<b>Associate Professor,</b>	University of Texas at El Paso
<b>2012 – 2018</b>	<b>Assistant Professor,</b>	University of Texas at El Paso
<b>2007 – 2012</b>	<b>Graduate Assistant,</b>	Texas A&M University
<b>2006 – 2007</b>	<b>Teacher,</b>	Jiangdongmen Elementary School, Nanjing, PRC

- ❖ Member and Secretary of UTEP Academy of Distinguished Teachers
  - Recipient of UT System Regents' Outstanding Teaching Award
- ❖ Co-founder and co-director:
  - College of Education MAKERSPACE—Transdisciplinary Studies in Early Childhood and STEM Education Laboratory
- ❖ Courses taught include:
  - ECED 5359 Asset & Art-based Teach, Birth-8
  - ECED 2380 STEAM Learning in Early Years
  - ECED 5357 Play, Games & Toys in ED, Birth-8
  - ELED 4310 Teaching Mathematics in Elementary Schools
  - BED 4310 Teaching Mathematics in Bilingual Classrooms
  - MTED 5318 Current Topics in Math Education
  - MTED 5320 Research-Based Practices in Mathematics Classes
  - MTED 5322 Pedagogical Content Knowledge in Teach Mathematics
  - MTED 5326 Culture, History, Epistemology and Pedagogy of Mathematics
  - ECED 5321 Trends in Early Childhood Education
  - ECED 5352 Seminar in Early Childhood Education
  - MTED 6310 Research Trends in Mathematics/Science Education
  - TED 5300 Research for Classroom Teachers
  - TED 6310 Learning Theory
  - TED 6319 Research of STEM Toys and Game-Based Learning

## SCHOLARSHIP

(H Index=19 and Total Citations=1139. Data from *Google Scholar* by 9/11/ 2023)

### Articles in Peer-Reviewed Journals (\* Indicates student co-authors)

1. Kim, S. J., **An, S. A.**, Convertino, C., & Son, M. (2023 Online First). Promoting critical media literacy in bilingual households through mother-child conversations about gender: A multiple case study. *Journal of Research in Childhood Education*, 1-18.
2. **An, S. A.**, Tillman, D. A., Hachey, A. C., & \*Smith, K. (2023 Online First). Choreographing complexity: Investigation of elementary preservice teachers' quantitative manipulation in large group formations. *Education Inquiry*. 1-19
3. **An, S. A.**, Tillman, D. A., Kim, S., & Tinajero, J. (2023). Meter or Yard: Preservice bilingual teachers' methods of introducing measurement concepts to young students by modifying a classic story. *Journal of Bilingual Education Research and Instruction*. 24(2), 80-95.
4. **An, S. A.**, Hachey, A. C., Tillman, D. A., \*Divis, D., & \*Birdwell, B. (2023). Larger vs. luckier: Preservice teachers' exploration of probabilistic reasoning through an aleatoric music activity. *International Journal of Mathematical Education in Science and Technology*. 54(3), 325-350.
5. **An, S. A.**, Tillman, D. A., Hachey, A. C., & \*Smith, K. (2023). Preservice teachers' reflection on the use of visual supports to improve mathematics pedagogy: A case study of fraction and ratio. *Journal of Mathematics Education at Teachers College*, 14(1), 21-31.
6. **An, S. A.**, Hachey, A. C. Kim, S., & Tillman, D. A. (2023). When 10 ≠ ten: Teachers' develop original stories to conceptualize numeral transition. *Journal of Early Childhood Teacher Education*. 44(1) 22-41.
7. Tinajero, J., **An, S.A.**, & Tinajero, R. (2023). An examination of pre-service teachers' development of communication skills with parents of ELs and conceptual understanding about parental involvement. *Journal of Latinos and Education*, 22 (1), 15-28
8. Tinajero, J. V., **An, S. A.**, & Tinajero, R. J. (2022-Online First). Merging authentic field experiences with direct interactions with parents of ELs to improve Hispanic pre-service teachers' self-efficacy toward parental involvement. *Journal of Latinos and Education*, 1-10.
9. **An, S. A.**, Cashman, T., & Tillman, D. (2022). Preservice teachers' use of mathematics pedagogy to conceptualize distortion in world maps. *Journal of International Social Studies*, 12(2), 1-21.
10. Hachey, A. C., **An, S. A.**, & Golding D. (2022). Nurturing kindergarteners' early STEM academic identity through makerspace pedagogy. *Early Childhood Education Journal* 50(3), 469-479.
11. **An, S. A.**, Tillman, D. A., & Hachey, A. C. (2021). Off the paper and into the dance: Investigating preservice elementary teachers' experiences with dynamic spatial reasoning choreography tasks. *Research in Dance Education*, 22(1), 17-37.
12. Tillman, D., Alvidrez-Aguirre, V., Kim, S. J., & **An, S. A.** (2019). Teachers' conceptions of the pedagogical potential for classroom-based augmented reality. *Journal of Educational Multimedia and Hypermedia*, 28(4), 411-434.
13. **An, S. A.**, Kim, S. J., Tillman, D., & Tinajero, J. (2019). Preservice teachers' development of literacy-themed mathematics instruction for early childhood classrooms. *International Journal of Early Childhood*, 51(1), 41-57.
14. **An, S. A.**, Tillman, D., Kim, S. J., Tinajero, J., & \*Wang, J. (2019). Teaching numbers through dance: Developing a choreography-themed mathematics curriculum for early childhood students. *Journal of Dance Education*, 18(4), 1-10.
15. **An, S. A.** & Tillman (2018). Preservice teachers' pedagogical use of "Gerrymandering" to integrate social studies and mathematics. *Journal of Mathematics Education*, 11(3), 33-53.

16. Kim, S. J., Park, S., & **An, S. A.** (2018). "You can't be rich only doing good deeds": Bilingual kindergarteners' discussions about poverty and wealth. *International Journal of Early Childhood, 50*(1), 101-119.
17. Kim, S. J., **An, S. A.**, Tillman, D. & Lee, S. J. (2018). Connecting music and media literacies: A Case Study of music-literacy integrated education in a Spanish-English bilingual classroom. *Media Education Research Journal, 8*(1), 72-94.
18. **An, S. A.**, Kim, S. J., Tillman, D., Robertson, W., \*Juarez, M. & \*Guo, C. (2017). It doesn't feel like a job to learn": Hispanic preservice teachers' perceptions of dance-themed mathematics education. *Journal of Dance Education, 17*(4), 138-146.
19. **An, S. A.** (2017). Preservice teachers' knowledge of interdisciplinary pedagogy: The case of elementary mathematics-science integrated lessons. *ZDM -The International Journal on Mathematics Education, 49*(2), 237-248.
20. Zhang, M., Tillman, D. A., & **An, S. A.** (2017). Global prevalence of sleep deprivation in students and heavy media use. *Education and Information Technologies, 22*(1), 239-254.
21. **An, S. A.**, Zhang, M., Tillman, D., Lesser, L., \*Siemssen, A., & Tinajero, J. (2016). Learning to teach music-themed mathematics: An examination of preservice teachers' beliefs about developing and implementing interdisciplinary mathematics pedagogy. *Mathematics Teacher Education and Development, 18*(1), 20-36.
22. **An, S. A.**, Tillman, D., Robertson, W., Zhang, M., \*Siemssen, A., & \*Paez, C. (2016). Astronauts in outer space teaching students' science: Comparing Chinese and American implementations of space-to-earth virtual classrooms. *European Journal of Science and Mathematics Education, 4*(3), 397-412.
23. Lesser, L., **An, S. A.**, & Tillman, D. (2016). The use of song to open an educational development workshop: Exploratory analysis and reflections. *To Improve the Academy, 35*(2), 284-302.
24. **An, S. A.**, Tillman, Zhang, M., D., Robertson, W., & Tinajero, J. (2016). Hispanic preservice teachers' peer evaluations of interdisciplinary curriculum development: A self-referenced comparison between monolingual generalists and bilingual generalists. *Journal of Hispanic Higher Education, 15*(4) 291-309.
25. \*Galindo, F. A., Tillman, D. A., & **An, S. A.** (2016). Luck is not a factor: Representations of female protagonists' STEM skills within blockbuster movies by James Cameron. *Journal of Mathematics Education, 9*(2), 22-36.
26. \*Lesser, J. B., Tillman, D. A., Lesser, L. M., & **An, S. A.** (2016). Internship experience in an educational technology laboratory: Autoethnography of an eighth-grade student-researcher. *Journal of Mathematics Education, 9*(2), 109-118.
27. **An, S. A.**, Tillman, D., & \*Paez, C. (2015). Music-themed mathematics education as a strategy for improving elementary preservice teachers' mathematics pedagogy and teaching self-efficacy. *Journal of Mathematics Education at Teachers College, 6*(1), 9-24.
28. **An, S. A.**, & Tillman, D. (2015). Music activities as a meaningful context for teaching elementary students mathematics: A quasi-experiment time series design with random assigned control group. *European Journal of Science and Mathematics Education, 3*(1), 45-60.
29. Tillman, D., **An, S. A.**, & Boren, R. (2015). Assessment of creativity in arts and STEM integrated pedagogy by preservice elementary teachers. *Journal of Technology and Teacher Education, 23*(3), 301-327.
30. Zhang, M., Trussell, R. P., Tillman, D. A. & **An, S. A.** (2015). Tracking the rise of Web information needs for mobile education and an emerging trend of digital divide. *Computers in the Schools, 32*(2), 83-104.
31. **An, S. A.**, Zhang, M., \*Flores, M., \*Chapman, J. R., Tillman, D. A., & \*Serna, L. (2015). Music activities as an impetus for Hispanic elementary students' mathematical disposition. *Journal of*

- Mathematics Education*, 8(2), 39-55.
32. Tillman, D. A., Wilson, J. A., Zhang, M., Camsat, D., \*Galindo, F. A., & **An, S. A.** (2015). I've got the power: Representations of mathematical skills and abilities within popular movies about successful hip hop musicians. *Journal of Mathematics Education*, 8(2), 74-96.
  33. Tillman, D. A., Zhang, M., **An, S. A.**, Boren, R., & \*Paez-Paez, C. (2015). Employing rapid prototyping design technologies to support contextualized mathematics education. *Journal of Computers in Mathematics and Science Teaching*, 34(4), 455-483.
  34. **An, S. A.**, Tillman, D., Boren, R., & \*Wang, J. (2014). Fostering elementary students' mathematics disposition through music-mathematics integrated lessons. *International Journal for Mathematics Teaching and Learning*, 15(3), 1-18.
  35. **An, S. A.**, & Tillman, D., Shaheen, A., & Boren, R. (2014). Preservice teachers' perception about teaching mathematics through music. *Journal of Interdisciplinary Teaching and Learning*, 4(3), 150-171.
  36. **An, S. A.**, & Tillman, D. (2014). Elementary teachers' design of arts based teaching: Investigating the possibility of developing mathematics-music integrated curriculum. *Journal of Curriculum Theorizing*, 30(2), 20-38.
  37. Tillman, D., **An, S. A.**, Boren, R., & Slykhuis, D. (2014). Building model NASA satellites: Elementary students studying science using a NASA-themed transmedia book featuring digital fabrication activities. *Journal of Computers in Mathematics and Science Teaching*, 33(3), 327-348.
  38. Tillman, D. A., **An, S. A.**, Cohen, J. D., Kjellstrom, W., & Boren, R. L. (2014). Exploring wind power: Improving mathematical thinking through digital fabrication. *Journal of Educational Multimedia and Hypermedia*, 23(4), 401-421.
  39. **An, S. A.**, Capraro, M. M. & Tillman, D. (2013). Elementary teachers integrate music activities into regular mathematics lessons: Effects on students' mathematical abilities. *Journal for Learning through the Arts*, 9(1), 1-20.
  40. Tillman, D., **An, S. A.**, & Boren, R. (2013). Hispanic female preservice elementary teachers' mathematics teaching self-efficacies, attitudes, and student outcome expectations. *Journal of Mathematics Education*, 6(2), 27-47.
  41. Capraro, M. M., **An, S. A.**, Ma, T., Rangel-Chavez, A. F., & Harbaugh, A. (2012). An investigation of preservice teachers' reflections on using guess and check in problem solving. *Journal of Mathematical Behavior*, 31(1), 105-116.
  42. **An, S. A.**, Capraro, M. M., & Hao, H. (2011). Ideological representations in mathematics textbooks in china during the Cultural Revolution decade: A relational analysis of textbooks from 1966-1976. *Journal of Curriculum Theorizing*, 27(3), 239-256.
  43. **An, S. A.**, Ma, T., & Capraro, M. M. (2011). Preservice teachers' beliefs and attitude about teaching and learning mathematics through music: An intervention study. *School Science and Mathematics*, 111(5), 235-247.
  44. **An, S. A.**, & Kulm, G. (2010). How Chinese in-service elementary mathematics teachers gain knowledge from professional development: A focus group study. *Journal of Mathematics Education*, 4(1), 41-57.
  45. Li, Y., Chen, X., & **An, S. A.** (2009). Conceptualizing and organizing content for teaching and learning in selected Chinese, Japanese and US mathematics textbooks: The case of fraction division. *ZDM - The International Journal on Mathematics Education*, 41(6), 809-826.
  46. **An, S. A.**, Kulm, G., & Ma, T. (2008). The effects of a music composition activity on Chinese students' attitudes and beliefs towards mathematics: An exploratory study. *Journal of Mathematics Education*, 1(1), 81-98.

## Articles in Practitioner Journals and Editorials

47. **An, S. A.** (2015). Integrating mathematics and music in education: After 60 years, can we reunite the separated twins? *Journal of Mathematics Education*, 8(2), 1-3.
48. **An, S. A.**, & Tillman, D. (2015). The five levels of inquiry-based mathematics tasks. [数学开放题的五个层次]. *Jiangsu Education*, 2015(2), 19-20.
49. **An, S. A.** (2014). Inquiry-based mathematics tasks and the development of students' mathematical cognition. [数学问题开放化与学生数学思维发展的意义]. *Teachers Today*, 3(6), 29-30.

## Book and Book Chapters

50. Tillman, D. A., & **An, S. A.** (2020). Guitarmakers on the border: Bilingual elementary students learning math by designing and building guitars. In Hunter-Doniger, T (Ed.), *STEAM Education: Transdisciplinarity of Art in the Curriculum*. NY, NY: National Art Education Association.
51. Tillman, D., Teller, R., Perez, P., & **An, S. A.** (2019). Employing 3D printing to fabricate augmented reality headsets for middle school stem education source title. In I. Santos, N. Ali & S. Areepattamannil (Ed.), *Interdisciplinary and International Perspectives on 3D Printing in Education* (pp. 241-261). Charlotte, NC: Information Age Publishing.
52. Tillman, D., **An, S. A.**, & Robertson, W. (2018). The relationship between formal and informal learning. In J. de Mora, K. Kennedy (Ed.), *Schools and Informal Learning in a Knowledge-Based World* (pp. 62-80). New York: Routledge.
53. **An, S. A.**, Lesser, L., & Tillman, D. (2018). The hidden musicality of math class: A transdisciplinary approach to mathematics education. In N. Radakvic & L. Limin (Ed.), *Transdisciplinarity in mathematics education: Blurring disciplinary boundaries* (pp. 25-45). New York, NY: Springer.
54. An, S., & **An, S. A.** (2015). Comparing teachers' knowledge on multidigit division between U.S. and China. In J. Cai (Ed.), *The first sourcebook on Asian research in mathematics education: China, Korea, Singapore, Japan, Malaysia and India*, (pp. 567-586). Charlotte, NC: Information Age Publishing.
55. **An, S. A.** (2014). Arts integrated with mathematics. In C. R. Reynolds, K. J. Vannest, & E. Fletcher-Janzen (Eds.), *Encyclopedia of special education: A reference for the education of children, adolescents, and adults with disabilities and other exceptional individuals* (4th ed.), (p. 214). Hoboken, NJ: John Wiley and Sons.
56. Wu, Z., **An, S. A.**, & An, S. (2013). Father's role in Chinese children's education. In J. Pattnaik (Ed.). *Father/male involvement in young children's lives: an international analysis*, (pp. 301-316). New York, NY: Springer.
57. **An, S. A.**, & Capraro, M. M. (2011). *Music-math integrated activities for elementary and middle school students*. Irvine, CA: Education for All.

## Conference Proceedings

58. Soto, T.J., Tillman, D.A. & An, S.A. (2023). *Using Augmented Reality (AR) to Optimize Training Opportunities for Ready Medical Force Sustainment*. In E. Langran, P. Christensen & J. Sanson (Eds.), Proceedings of Society for Information Technology & Teacher Education International Conference (pp. 1214-1222). New Orleans, LA, United States: Association for the Advancement of Computing in Education (AACE).
59. Tillman, D.A., Soto, T.J., Smith, K.H. & **An, S.A.** (2022). *Visualizations of Current and Aspired TPACK from In-Service Teachers*. In E. Langran (Ed.), Proceedings of Society for Information

- Technology & Teacher Education International Conference (pp. 2275-2280). San Diego, CA, United States: Association for the Advancement of Computing in Education (AACE).
60. Soto, T.J., Tillman, D.A. & **An, S.A.** (2021). *Applying TPACK to Medical Education*. In E. Langran & L. Archambault (Eds.), *Proceedings of Society for Information Technology & Teacher Education International Conference* (pp. 1632-1637). Online, United States: Association for the Advancement of Computing in Education (AACE).
  61. Tillman, D., Mishra, P., Henriksen, D., Slykhuis, D., Smith, S., Jones, W.M., Cohen, J., Alexander, C., Asing-Cashman, J. & **An, S.** (2020). *Creating Creative Classrooms 2020: Field-tested Best Practices*. In D. Schmidt-Crawford (Ed.), *Proceedings of Society for Information Technology & Teacher Education International Conference* (pp. 1168-1170). Online: Association for the Advancement of Computing in Education (AACE).
  62. Tillman, D., Franco, E., Tinajero, J. & **An, S.** (2020). *Designing Creative Classrooms: Using Music & Dance to Teach Math & Science*. In D. Schmidt-Crawford (Ed.), *Proceedings of Society for Information Technology & Teacher Education International Conference* (pp. 1173-1174). Online: Association for the Advancement of Computing in Education (AACE).
  63. Tillman, D.A., Robertson, W.H. & **An, S.A.** (2019). An Asset-Based Approach to Integrating Formal and Informal Education during Teacher Preparation. In K. Graziano (Ed.), *Proceedings of Society for Information Technology & Teacher Education International Conference* (pp. 1427-1431). Las Vegas, NV, United States: Association for the Advancement of Computing in Education (AACE).
  64. Teller, R.C., Tillman, D.A., Robertson, W.H., Tinajero, J.V. & **An, S.A.** (2019 April). Preparing Bilingual Teachers to Integrate the Engineering Design Process into Upper-Elementary and Middle School Classrooms. In K. Graziano (Ed.), *Proceedings of Society for Information Technology & Teacher Education International Conference* (pp. 1646-1652). Las Vegas, NV, United States: Association for the Advancement of Computing in Education (AACE).
  65. Tillman, D.A., Tinajero, J.V., Brown, C.H., Robertson, W.H. & **An, S.A.** (2019 April). Fostering School Security during Teacher Preparation. In K. Graziano (Ed.), *Proceedings of Society for Information Technology & Teacher Education International Conference* (pp. 695-699). Las Vegas, NV, United States: Association for the Advancement of Computing in Education (AACE).
  66. Tillman, D., Hachey, A., & **An, S. A.** (2018). Creative Use of Augmented Reality (AR) in the Classroom: A Synopsis of Three Empirical Studies. In *Proceedings of EdMedia: World Conference on Educational Media and Technology* (pp. 898-903). Amsterdam, Netherlands: Association for the Advancement of Computing in Education (AACE).
  67. **An, S. A.**, & Tillman, D. (2015). Teaching in Microgravity Environments: Probing Innovative K12 Science Education. In D. Slykhuis & G. Marks (Eds.), *Proceedings of Society for Information Technology & Teacher Education International Conference 2015* (pp. 2197-2202). Chesapeake, VA: Association for the Advancement of Computing in Education (AACE).
  68. Tillman, D., Smith, S., **An, S. A.**, Mishra, P., Henriksen, D., Cohen, J., Slykhuis, D., Alexander, C., Asing-Cashman, J., Paez, C., Siemssen, A., Wilson, C., Romo, S. & Jones, W.M. (2015). *Creating Creative Classrooms: Field-tested Best Practices*. In D. Slykhuis & G. Marks (Eds.), *Proceedings of Society for Information Technology & Teacher Education International Conference 2015* (pp. 137-140). Chesapeake, VA: Association for the Advancement of Computing in Education (AACE).
  69. Kulm, G., Brown, I., Lewis, C., Davis, T., **An, S. A.**, & Anderson, L. (2011). Knowledge foundations for teaching algebra for equity. In Wiest, L. R., & Lamberg, T. (Eds.) *Proceedings of the 33rd Annual Meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education* (pp. 182-189). Reno, NV: North American Chapter of the International Group for the Psychology of Mathematics Education (PME-NA).

## Conference Presentations

1. Tillman, D. A., Yan, W., **An, S.**, Liew, J., Lim, K. H., Garbrecht, L., & Yasskin, P. B. (2023, June), *Work in Progress: Toward an Augmented Reality (AR) learning environment for Hispanic high school students to visualize and embody STEM spatial transformations*. Paper presented at 2023 ASEE Annual Conference & Exposition, Baltimore, MD.
2. Tillman, D.; Lim, K. & **An, S.A.**, (2023 June). *Toward an Augmented Reality (AR) Learning Environment for Hispanic High School Students to Visualize and Embody STEM Spatial Transformations*. The American Society for Engineering Education Annual Conference & Exposition, Baltimore, MD.
3. Tinajero, J., **An, S. A.**, & Tinajero, R. (2023 May). *Merging authentic field experiences with direct interactions with parents of ELs to improve Hispanic pre-service teachers' self-efficacy toward parental involvement*. Paper presented at the annual conference of American Educational Research Association, Virtual Meeting.
4. Kim, S. J., **An, S. A.**, & Park, S. (2021 April). Exploring the pedagogical potential of multimedia-enriched literacy activities for Early Bilingual Learners: A multiple case study. Paper presented at the annual conference of American Educational Research Association, Virtual Meeting.
5. **An, S. A.**, Tillman, D., Kim, S. J., & Tinajero, J. (2020 April). *We Kept Bumping Into One Another: Preservice Teachers' Self-Reflection of Spatial Visualization Abilities Through Choreographing and Performing Group Dance*. Paper presented at the annual conference of American Educational Research Association, Virtual Meeting.
6. **An, S. A.** (2019 November). *Children's Makerspace: An Intellectual Development Oriented Pedagogy for Early STEM Education*. Paper presented at the International Reconceptualizing Early Childhood Education Conference, Las Cruces, NM.
7. **An, S. A.** (2019 April). *Awareness of Mathematical Patterns through Music*. Paper presented at the UTEP Teachers of Future Miners Early Childhood Conference, El Paso, TX.
8. **An, S. A.**, Kim, S. J., Tillman, D. & Tinajero, J. (2019 April). *Teaching Numbers through Dance: Developing a Choreography-Themed Mathematics Curriculum for Elementary Students*. Paper presented at the annual conference of American Educational Research Association, Toronto, Canada.
9. Kim, S. J., & **An, S. A.** (2019 April). *Enhancing Early Bilingual and Biliteracy Instruction through Multimedia-Enriched Activities: A Multiple-Case Study*. Paper presented at the annual conference of American Educational Research Association, Toronto, Canada.
10. Teller, R.C., Tillman, D.A., Robertson, W.H., Tinajero, J.V. & **An, S.A.** (2019 April). Preparing Bilingual Teachers to Integrate the Engineering Design Process into Upper-Elementary and Middle School Classrooms. Paper presented at the Annual Conference of Association for the Advancement of Computing in Education Las Vegas, NV.
11. Tillman, D.A., Tinajero, J.V., Brown, C.H., Robertson, W.H. & **An, S.A.** (2019 April). *Fostering School Security during Teacher Preparation*. Paper presented at the Annual Conference of Association for the Advancement of Computing in Education Las Vegas, NV.
12. Tillman, D.A., Robertson, W.H. & **An, S.A.** (2019 April). *An Asset-Based Approach to Integrating Formal and Informal Education during Teacher Preparation*. Paper presented at the Annual Conference of Association for the Advancement of Computing in Education Las Vegas, NV.
13. Kim, S. J., Park, S. **An, S. A.**, (2018 April). *Living Together in a Diverse World: Bilingual Kindergartners' Conversations about the Stories of Two Mommies and Daddies*. Paper presented at the annual conference of American Educational Research Association, New York, NY.

14. Tillman, D., Hachey, A., & **An, S. A.** (2018 June). *Creative Use of Augmented Reality (AR) in the Classroom: A Synopsis of Three Empirical Studies*. Paper presented at EdMedia + Innovate Learning Conference by Association for the Advancement of Computing in Education, Amsterdam, Netherlands.
15. **An, S. A.**, Kim, S. J., Wilson, C. & Tinajero, J. (2017 April). *Preservice Teachers' Perception of Teaching Mathematics Through Choreography and Dance*. Paper presented at the annual conference of American Educational Research Association, San Antonio, TX.
16. **An, S. A.**, Tillman, D., & Tinajero, J. (2016, April). *Music Activities as an Impetus for Hispanic Elementary Students' Mathematical Disposition*. Presented at the annual conference of American Educational Research Association, Washington, DC.
17. **An, S. A.**, & Tillman, D. (2015, March). *Teaching in Microgravity Environments: Probing Innovative K-12 Science Education*. Presented at the Society for Information Technology and Teacher Education International Conference, Las Vegas, NV.
18. **An, S. A.**, Tillman, D., Zhang, M., Robertson, W., Tinajero, J., & Lesser, L. (2015, July). *Music Activities as Effective Pedagogical Strategies for Teaching Mathematics in Elementary School*. Presented at the Classroom Teaching Research for All Students Conference, Long Beach, CA.
19. **An, S. A.**, Tillman, D., Tinajero, J. & Kim, S. (2015, April). *The Effects of Interdisciplinary Practice on Elementary Preservice Teachers' Mathematics Teaching Self-Efficacy and Pedagogy*. Presented at the annual conference of American Educational Research Association, Chicago, IL.
20. Tillman, D., Smith, S., **An, S. A.**, Mishra, P., Henriksen, D., Cohen, J., Slykhuis, D., Alexander, C., Asing-Cashman, J., Paez-Paez, C., Siemssen, A., Wilson, C., Romo, S., Jones, W. M. (2015, March). *Creating Creative Classrooms: Field-tested Best Practices*. Presented at the annual conference of the Society for Information Technology and Teacher Education, Las Vegas, NV.
21. **An, S. A.**, & Tillman, D. (2015, February). *Music and the Development of Bilingual Students' Mathematical Abilities*. Presented at the Bilingual Educators Emphasizing Multicultural Settings (BEEMS), El Paso, TX.
22. Tillman, D., **An, S. A.**, Tinajero, J. & Siemssen, A. (2015, February). *3D-Printing in Your Classroom*. Presented at the Bilingual Educators Emphasizing Multicultural Settings (BEEMS), El Paso, TX.
23. **An, S. A.**, & Tillman, D. (2014, December). *Music and the Development of a Mathematical Brain*. Keynote speakers at Music, Art and Science EXPO, El Paso, TX.
24. Tillman, D. A., **An, S. A.**, Zhang, M., and Boren, R. L. (2014, October). *Three keys to fusing STEAM education: Digital multimedia, design tools, and computer-based adaptive evaluation*. Paper presented at the Annual Conference of the American Evaluation Association, Denver, CO.
25. **An, S. A.** (2014, November). *Preservice Elementary Teachers' Designing and Implementing Music Themed Mathematics Lessons*. Presented at the annual conference of School Science and Mathematics Association, Jacksonville, FL.
26. **An, S. A.**, Tillman, D., & Paez, C. (2014, April). *Elementary Preservice Teachers' Perceptions About and Approaches to Teaching Mathematics through Music*. Presented at the annual conference of American Educational Research Association, Philadelphia, PA.
27. **An, S. A.**, Tillman, D., Shaheen, A., & Lesser, L. (2013, November). *Research on Contextualizing Elementary Mathematics Education within Music Activities*. Presented at the annual conference of School Science and Mathematics Association, San Antonio, TX.
28. **An, S. A.** (2013, April). *Developing Mathematics Process Understanding through Music Activities*. Presented at the annual conference of National Council of Teachers of Mathematics, Denver, CO.



29. **An, S. A.** (2013, April). Fostering Elementary Students' Mathematics Achievement and Disposition through Music-Mathematics Integrated Lessons. Presented at the annual conference of American Educational Research Association, San Francisco, CA.
30. **An, S. A.** (2012, November). *Improving Students' Mathematics Process Ability Levels through the Music-Mathematics Integrated Curriculum and Instruction*. Presented at the annual conference of School Science and Mathematics Association, Birmingham, Al.
31. **An, S. A.**, & Kim, Y. M. (2012, April,). *Understand and apply math meaningfully through music activities*. Presented at the annual meeting of the National Council of Teachers of Mathematics, Philadelphia, PA.
32. **An, S. A.**, Kulm, G., Brown, I., & Hao, H. (2012, April,). *Effects of problem solving equity challenges on KTA, perceptions about equity, and efficacy*. Presented at the annual meeting of the National Council of Teachers of Mathematics, Philadelphia, PA.
33. **An, S. A.** (2011, November). *Teach math integrated with music*. California Mathematics Council South Annual Conference. Palm Springs, CA.
34. **An, S. A.**, & Wang, J. (2011, November). *Narrative analysis of Chinese students' struggling experiences in learning mathematics and science*. Presented at the annual conference of School Science and Mathematics Association, Colorado Springs, CO.
35. **An, S. A.**; & Kim, Y. M. (2011, November). *The implementation of music-math integrated lessons in elementary school classes*. Presented at the annual conference of School Science and Mathematics Association. Colorado Springs, CO.
36. Kulm, G., Brown, I., Lewis, C., Davis, T., **An, S. A.**, & Anderson, L. (2011, October). *Knowledge foundations for teaching algebra for equity*. Presented at the annual conference of the North American Chapter of the International Group for the Psychology of Mathematics Education. Annual Conference of the North American Chapter of the International Group for the Psychology of Mathematics Education. Reno, NV.
37. **An, S. A.** (2011, June). *Teaching basic algebraic concepts to young children: An analysis of two music integrated lessons*. Presented at the Classroom Teaching Research for All Students Conference, Changshu, China.
38. **An, S. A.**, Capraro, M. M., & Lee, A. (2011, April). *Teaching Geometry through Music Instrument Making and Designing*. Presented at the annual meeting of the National Council of Teachers of Mathematics, Indianapolis, IN.
39. **An, S. A.**, Capraro, M. M., & Hao, H. (2011, April). *Ideological representations in mathematics textbooks in China during the Cultural Revolution decade: A relational analysis of selected textbooks from 1966–1976*. Presented at the annual meeting of the American Educational Research Association, New Orleans, LA.
40. **An, S. A.** (2010, June). *The effects of using music to teach math*. Presented at the Chinese National Mathematics Teacher Education Conference. Hangzhou, China.
41. **An, S. A.**, & An, S. (2010, April). *Using music composition to teach math*. Presented at the annual meeting National Council of Teachers of Mathematics & Exposition. San Diego, CA.
42. An, S., Wu, Z., & **An, S. A.** (2009, April). *Chinese teachers' knowledge of teaching whole number division with multiple digits*. Presented at the annual meeting of the American Educational Research Association, San Diego, CA.
43. **An, S. A.** (2010, November). *Teaching Mathematics through Music: An profound integrated approach*. Presented at the annual meeting School Science and Mathematics Association Annual Convention. Fort Myers, FL.
44. **An, S. A.**, Kulm, G., & Ma, T. (2009, April). *The effects of a pop music composition activity on Chinese students' attitudes and beliefs towards mathematics: An exploratory study*. Presented at the annual meeting American Educational Research Association Annual Meeting. San Diego, CA.

45. **An, S. A.** (2009, April). *Balancing school math and everyday math: return to Confucius learning philosophy*. Presented at the annual meeting American Educational Research Association Annual Meeting. San Diego, CA.
46. **An, S.A.**, Ma, T., & Capraro, M. (2009, January). *Changing preservice teachers' beliefs about teaching and learning mathematics through music: An intervention study*. Presented at the annual meeting The Southwest Educational Research Association Annual Conference. San Antonio, TX.
47. Li, Y., Chen, X., **An, S. A.** (2009, April). *Conceptualizing and organizing content for teaching and learning in Chinese mathematics textbooks*. Presented at the annual meeting National Council of Teachers of Mathematics Annual Meeting & Exposition. Washington, DC.
48. An, S., Wu, Z., & **An, S. A.** (2009, April). *Achieving a balance in algebra textbook*. Presented at the annual meeting of National Council of Teachers of Mathematics. Washington, DC.
49. **An, S. A.** (2008, November). *Using school math and everyday math to measure and estimate irregular figures area*. School Science and Mathematics Association Annual Convention. Raleigh, NC.

## GRANTS

### Funded Projects (Total Amount: \$320,500)

- *Let's Play El Paso: Fraction Ball*. ChangeX from LEGO Foundation, \$2,500, 2023-2024. PI: C. Wiltshire; Co-PIs: **S. An**, J. Walker, & R. Pinilla
- *Family-Based Pedagogy—Teaching K-12 Subjects While Encouraging the Students' Parents and Families to Join the Learning*. UTEP, \$4000, 2022-2023. PI: **S. An**
- *Increasing STEM Participation and Success Rates of Latino Youth Using Culturally Relevant Immersive Technologies*. National Science Foundation, \$ 297,550.00, 2013-2017. PI: A. Gates; Co-PIs: **S. An**, & D. Tillman
- *K-12 Math Education within the Context of Real World Music Activities*. UTEP, \$20,000, 2012-2013. PIs: **S. An**, D. Tillman, A. Shaheen, & L. Lesser

### Proposals Under Review

- *Twenty Roaring Pilots from the 1920s: Using Augmented Reality to Exhibit the History of the Golden Age of Aviation*. National Endowment for the Humanities. \$100,000, 2024-2026. PI: **S. An**; Co-PIs: D. Tillman, & W. Yan

### Proposals Submitted and Not Funded

- *MDFS<sup>2</sup>: Medical Dialogues with Family Support for Mother-Daughter/Father-Son*. UTEP-TTUHSC El Paso Joint Seed Grant Research Projects,\$12,000, Submitted in May 2022. PIs. **S. An** & S. Crawford.
- *WAVES: A Touring Percussion Arts and STEM Learning Program*. NSF, \$2,500,000. Submitted in January 2013. PI: J. Brockman; Co-PIs: **S. An**, A. Zornig, P. Golding et al.
- *Increasing Hispanic Youth's Mathematics Success via Interactions with Musicians and Mathemusicians in Professional Settings*. William T. Grant Foundation, \$500,000. Submitted in January 2014. PI: **S. An**; Co-PIs: D. Tillman, L. Lesser, & A. Shaheen
- *WAVES: Connecting Analysis and Design through STEM and Musical Performance*. NSF, \$2,530,181. Submitted in January 2014. PI: J. Brockman; Co-PIs: **S. An**, A. Zornig, P. Golding, P. Flynn, D. Hall, M. Kloser et al.

- *Increasing Hispanic Middle Grade Students' Informal STEM Learning Through Music-themed Contexts*. NSF, \$300,000. Submitted in November 2014. PI: **S. An**; Co-PIs: D. Tillman, L. Lesser, & A. Shaheen et al.
- *Increasing Hispanic Middle Grade Students' Mathematics Success by Activating Higher-order Thinking in Authentic Music-themed Contexts*. NSF, \$450,000. Submitted in November 2014. Submitted in December 2013. PI: **S. An**; Co-PIs: D. Tillman, L. Lesser, & A. Shaheen et al.
- *STRATEGIES: Increasing Latina/o Middle Grade Students' Mathematics Success Via Data Visualization*. NSF, \$1,000,000. Submitted in January 2014. PI: D. Tillman; Co-PIs: **S. An**; L. Lesser et al.
- *STRATEGIES: Increasing Hispanic Middle Grade Students' Mathematics Success through Ecofriendly Rapid-prototyping of STEAM Designs*. NSF, \$950,000. Submitted in November 2014. PI: D. Tillman; Co-PIs: **S. An**; L. Lesser et al.
- *Fostering Latina's Algebra Readiness through Choreographic Creation and Dance Performance*. NSF, \$447,531. Submitted in December 2016. PI: **S. An**; Co-PIs: D. Tillman, & J. Tinajero
- *Fostering Mathematical Readiness for Deaf/Hard-of-hearing Students through Choreographic and Dance Themed Learning*. NSF, \$651,251. Submitted in November 2017. PI: **S. An**; Co-PIs: D. Tillman, & J. Tinajero

## SERVICE

### Service on Departmental, College, or University Committees

Role/Position	Level	Committee/Program	Service Period
Secretary	UTEP	Academy of Distinguished Teachers Executive Council	(2021-present)
Senator Alternate	UTEP	Faculty Senate	(2013-2016)
Member	UTEP	Undergraduate Curriculum Committee	(2015-2017)
Member	UTEP	Teaching Effectiveness Committee	(2017-2018)
Vice-Chair	UTEP	Teaching Effectiveness Committee	(2018-2020)
Member	UTEP	Technology/Infrastructure Committee	(2020-present)
Member	COE	Educator Preparation Program Committee	(2017-present)
Member	COE	Tenure & Promotion Committee	(2019-2021)
Coordinator	COE	Certificate Exam Preparation Workshop Series	(2019-present)
Co-Director	COE	Educational Technology Lab	(2012-2016)
Co-Director	COE	College of Education Makerspace	(2016-present)
Member	COE	Educational Technology Committee	(2013-2016)
Member	COE	International Initiatives Committee	(2013-2014)
Member	COE	Task Force #4 Organizational Structure	(2014-2015)
Member	TED	TLC Doctoral Committee	(2017-2020)
Member	TED	Graduate Program Committee (Term 1 & 2)	(2018-present)
Member	TED	Undergraduate Program Committee (Term 1)	(2013-2016)
Member	TED	Undergraduate Program Committee (Term 2)	(2020-present)
Member	TED	Faculty Search Committee	(2020-2020)
Member	TED	Task Force for Develop Fast-track Program	(2015-2016)

### Service for Academic Journal

Role/Position	Journal	Service Period
Associate Editor	<i>Journal of Mathematics Education</i>	(2016-present)
Editorial Board Members	<i>Journal of Hispanic Higher Education</i>	(2018-present)
Guest Editor	<i>Journal of Mathematics Education, SI 8(2) &amp; 9(2)</i>	(2015-2016)
Editor Assistant	<i>Journal of Mathematics Education</i>	(2010-2016)
Editor Assistant	<i>School Science and Mathematics</i>	(2007-2009)
Reviewer	<i>International Journal for Mathematics Teaching and Learning</i>	(2014-present)
Reviewer	<i>Journal for Research in Mathematics Education</i>	(2013-present)
Reviewer	<i>Journal of Mathematical Behavior</i>	(2012-present)
Reviewer	<i>School Science and Mathematics</i>	(2009-present)
Reviewer	<i>Journal of Mathematics Education</i>	(2010-present)
Reviewer	<i>Educational Studies in Mathematics</i>	(2013-present)
Reviewer	<i>Journal of Mathematics Teacher Education</i>	(2013-present)
Reviewer	<i>International Journal of Multicultural Education</i>	(2010-present)
Reviewer	<i>Mathematics Teacher Education and Development</i>	(2015-present)
Reviewer	<i>Journal of Latinos and Education</i>	(2018-present)
Reviewer	<i>Journal of Research in Innovative Teaching and Learning</i>	(2018-present)
Reviewer	<i>Canadian Journal of Science, Mathematics and Technology Education</i>	(2021-present)

### Service for Academic Conferences

Role/Position	Conference	Service Period
Reviewer	National Council of Teachers of Mathematics (NCTM)'s Annual Meetings	(2010-present)
Reviewer	American Educational Research Association (AERA) Annual Meetings Annual Meetings	(2011-present)
Reviewer	Southwest Educational Research Association (SERA) Annual Meetings Annual Meetings	(2010-2012)
Reviewer	School Science and Mathematics Association (SSMA) Annual Meetings Annual Meetings	(2010-present)
Reviewer	The A Better Beginning (ABC) Conference	(2016-2018)
Reviewer	Teachers of Future Miners Early Childhood Conference	(2019-present)