

## Shuai (Sam) Wang

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Shuai Wang, Ph.D., is the Assistant Dean and an Associate Professor of the School of Education at Shanghai Jiao Tong University (SJTU). In his role as Assistant Dean, he oversees teacher professional development. Prior to joining SJTU, Dr. Wang worked as an Education Researcher at Stanford Research Institute. The overriding goal of Dr. Wang's research is to develop and evaluate diverse STEM teaching and learning approaches, ultimately facilitating educational policy formulation and implementation.

Throughout his career, Dr. Wang has served as Principal Investigator, Co-Principal Investigator, and senior personnel for numerous projects. He has secured research funding exceeding \$33 million, including grants from the U.S. National Science Foundation (NSF) and the U.S. Department of Education. His work has led to many publications in top-tier research journals and presentations at renowned international conferences. His research has garnered global media coverage, including recognition on the U.S. NSF homepage. He has also been collaborating closely with industrial partners, such as Apple, Pearson, and Squirrel AI Learning (the first Commercial AI Education company in China).

In addition to his research contributions, Dr. Wang actively serves as a reviewer for various SSCI and SCI research journals and international conferences. He has also served as a panelist for proposal reviews by the U.S. NSF. Currently, he serves on the editorial board of the *European Journal of Education* [SSCI], and holds the position of chair for the IEEE Recommended Practices for Evaluation of Adaptive Instructional Systems.

### ***Education***

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| 2016 | <b>University of Illinois at Urbana-Champaign (UIUC), U.S.</b><br>Ph.D. in Educational Psychology |
| 2011 | <b>University of Illinois at Urbana-Champaign (UIUC), U.S.</b><br>M.S. in Statistics              |
| 2009 | <b>Qingdao University, CN</b><br>B.A. in English<br>Valedictorian                                 |
| 2008 | <b>Missouri State University (MSU), U.S.</b><br>Exchange Student                                  |

### ***Professional Experience***

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- 2021-Present **Shanghai Jiao Tong University (SJTU), CN**  
Assistant Dean, Associate Professor, Ph.D. Student Advisor
- 2016-2021 **SRI International (Also Known As: Stanford Research Institute), U.S.**  
Education Researcher
- 2009-2015 **University of Illinois at Urbana-Champaign, U.S.**  
Lecturer and Graduate Teaching Assistant

### ***Selected U.S. Federal Grants***

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- 2020-2021 **Funding Source:** U.S. National Science Foundation  
**Role:** Co-Principal Investigator  
**Project:** Automated Collaboration Assessment Using Behavioral Analytics (#2016849).  
**Amount:** \$749,976
- 2019-2021 **Funding Source:** U.S. National Science Foundation  
**Role:** Co-Principal Investigator  
**Project:** Strengthening Middle School Mathematical Argumentation through Teacher Coaching: Bridging from Professional Development to Classroom Practice (#2000545).  
**Amount:** \$2,980,888
- 2018-2021 **Funding Source:** U.S. Department of Education  
**Role:** Participant  
**Project:** Mathematics, 3D Printing, and Computational Thinking through Work-Based Learning for Middle Schoolers (MPACT) (#U411C180070).  
**Amount:** \$3,923,862
- 2015-2019 **Funding Source:** U.S. National Science Foundation  
**Role:** Consultant  
**Project:** Collaborative Research: Investigating How English Language Learners Use Dynamic Representational Technology to Participate in Middle School Mathematical Practices (#1534626).  
**Amount:** \$1,124,073
- 2013-2017 **Funding Source:** U.S. Department of Education  
**Role:** Participant  
**Project:** Validating the SunBay Middle School Digital Mathematics Program (#U411B130019).  
**Amount:** \$11,981,927

***Selected Foundation & Commercial Funding (Amount Undisclosed)***

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- 2023      **Funding Source:** Shanghai Teacher Training Center  
**Role:** Principal Investigator  
**Project:** 2023 Governance of Shanghai teacher data (teacher information database)
- 2022      **Funding Source:** Shanghai Teacher Training Center  
**Role:** Principal Investigator  
**Project:** 2022 Governance of Shanghai teacher data (teacher information database)
- 2021      **Funding Source:** Shanghai Teacher Training Center  
**Role:** Principal Investigator  
**Project:** 2021 Governance of Shanghai teacher data (teacher information database)
- 2020-2021      **Funding Source:** IXL Learning  
**Role:** Principal Investigator  
**Project:** Evaluation of IXL Math. IXL Learning is an educational technology company that offers e-learning tools for K-12 students and teachers, with 1 in 6 students already using IXL in the U.S.
- 2017-2021      **Funding Source:** Squirrel Ai Learning  
**Role:** Principal Investigator  
**Project:** Evaluation of Squirrel Ai Learning, a Chinese commercial Artificial Intelligence-based product that provides personalized and adaptive instruction to students.
- 2019-2021      **Funding Source:** Imagine Learning, Inc.  
**Role:** Participant  
**Project:** Evaluation of Imagine Learning's Imagine Math, a web-based mathematics learning program for grades 3-8 combining adaptive instruction, a motivational system, and on-demand support from virtual teachers.
- 2017-2021      **Funding Source:** Apple, Inc.  
**Role:** Participant  
**Project:** Evaluation of Apple One-to-One ConnectED Program.
- 2016-2021      **Funding Source:** Pearson  
**Role:** Participant  
**Project:** Evaluation of Mastering Chemistry, a tech-based adaptive learning resource used to improve Chemistry learning among post-secondary students.
- 2016-2019      **Funding Source:** Multi-funder Initiative Led by Achieving the Dream  
**Role:** Participant

- Project:** Evaluation of the Open Educational Resources Degree Initiative.
- 2016-2017 **Funding Source:** Mitchell Hamline School of Law  
**Role:** Participant  
**Project:** Evaluation of a First-of-its-kind Hybrid Law Graduate Program.
- 2016-2018 **Funding Source:** Bill and Melinda Gates Foundation  
**Role:** Participant  
**Project:** Evaluation of the Next Generation Courseware Challenge.
- 2016-2017 **Funding Source:** Bill and Melinda Gates Foundation  
**Role:** Participant  
**Project:** Evaluation of EdReady.
- 2016-2017 **Funding Source:** Joyce Foundation  
**Role:** Participant  
**Project:** Evaluation of instructional technologies to support adult basic education programs in the instruction of basic literacy and numeracy skills.

### ***Peer-reviewed Publications (\* Corresponding Author)***

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- [25] Feng, Y., Cao, J., Cao, F., & **Wang, S.\*** (2023). The impact of technological pressure on teachers' digital teaching innovation: The moderating effects of growth mindset and TPACK. *Chinese Journal of Distance Education*. [CSSCI, in Chinese]
- [24] Murphy, R., **Wang, S.\***, Bienkowski, M., & Bhanot, R. (2023). Digital Learning Solutions for Improving Adults' Basic Skills. *Interactive Learning Environments*. [SSCI, Q1]
- [23] Summers, R., & **Wang, S.\*** (2023). Measuring a cross-sectional sample of students' intentions to engage with science and modeling associations according to two theoretical perspectives. *International Journal of Science Education*. [SSCI, Q2]
- [22] **Wang, S.\***, Christensen, C., Cui, W., Tong, R., Yarnall, L., Shear, L., & Feng, M. (2023). When adaptive learning is effective learning: Comparison of an adaptive learning system to teacher-led instruction. *Interactive Learning Environments*. [SSCI, Q1]
- [21] **Wang, S.\***, et al. (2023). Expert recommendations on digitalized STEM instructions. *Ministry of Education Office, CN*.
- [20] **Wang, S.\***, Li, X., & Shen, S., (2023). Secondary education (high school) in China. In: Liu, N., Feng, Z., & Wang, Q. (Eds.) *Education in China and the World*. Shanghai Jiao Tong University Press. [Book Chapter]
- [19] Griffiths, R., Mislevy, J., & **Wang, S.\*** (2022). Encouraging impacts of an open education resource degree initiative on college students' progress to degree. *Higher Education*. [SSCI, Q1]

- [18] Huang, F.†, Mislevy, J. L.†, **Wang, S.\*†**, Wei, X.†, & Zhang, X†. (2022). **Editorial:** Rigorous and high-quality efficacy studies of educational technology interventions. Section of Educational Psychology, appearing in both *Frontiers in Education* [ESCI] & *Frontiers in Psychology* [SSCI, Q1] [† Co-first Author; names are in alphabetical orders].
- [17] Liu, J., Pascarella, E., Wang, Q., Fu, J., & **Wang, S.\*** (2022). Reproduction of educational disadvantage? Examining the bachelor's degree attainment, college GPA, and graduate degree plan of non-native English-speaking students. *Journal of Language, Identity, and Education*. [SSCI, Q2]
- [16] **Wang, S.\***, Griffiths, R., Christensen, C., D'Angelo, C., & Condon, K. (2022). An evaluation of a first-of-its-kind hybrid law degree program. *Journal of Computing in Higher Education*. [SSCI, Q1]
- [15] **Wang, S.\*†**, Christensen, C.†, Xu, Y., Cui, W., Tong, R., & Shear, L. (2020). Measuring Chinese middle school students' motivation using the reduced instructional materials motivation survey (RIMMS): A validation study in the adaptive learning setting. *Frontiers in Psychology*. [SSCI, Q1] [† Co-first Author]
- [14] **Wang, S.**, Perry, M.\*, Mingle, L. A., & McConney, M. (2020). Examining discourse structures in Chinese and U.S. elementary mathematics classes. *International Journal of Educational Research*, 99, 101493. [SSCI, Q2]
- [13] **Wang, S.\*†**, Bajwa, NP.†, Tong, R.†, & Kelly, H. (2020). Transitioning to online instruction. In: Burgos, D., Tlili, A., & Tabacco, A. (Eds.) *Radical Solutions for Education in a Crisis Context: COVID-19 as an Opportunity for Global Learning*. Springer. [† Co-first Author] [Book Chapter]
- [12] **Wang, S.\*†**, Christensen, C.†, McBride, E.†, Kelly, H., Cui, W., Tong, R., Shear, L., Yarnell, L., & Feng, M. (2020). Identifying gaps in use of and research on adaptive learning systems. In H. Lane, S. Zvacek, & J. Uhomobhi (Eds.), *CSEDU, Vol 1* (pp. 118-124). [† Co-first Author] [Book Chapter] [dblp index]
- [11] Tong, R.\*†, **Wang, S.\*†**, McBride, E.†, Kelly, H.†, & Cui, W.† (2020). Data, mark of a new era. In: Burgos, D. (Ed.) *Radical Solutions & Learning Analytics: Personalised Learning and Teaching through Big Data*. Springer. [† Co-first Author] [Book Chapter]
- [10] **Wang, S.\***, Feng, M., Bienkowski, M., Christensen, C. & Cui, W. (2019). Learning from an adaptive learning system: Student profiling among middle school students. In H. Lane, S. Zvacek, & J. Uhomobhi (Eds.), *CSEDU, Vol 1* (pp. 78-84). [Book Chapter] [dblp index]
- [9] Feng, M.\*, Cui, W., & **Wang, S.** (2018). Adaptive learning goes to China. In C. P. Rosé, R. Martínez-Maldonado, H. U. Hoppe, R. Luckin, M. Mavrikis, K. Porayska-Pomsta, B. McLaren, & B. du Boulay (Eds.), *AIED, Vol 10948* (pp. 89-93). Cham, Switzerland: Springer. [Book Chapter] [dblp index]

- [8] Lewis, S., Lindgren, R.\*, **Wang, S.**, & Pea, R. (2018). Learning with media: harnessing viewpoint and motion to generate fields of potential action. *Journal of Media Psychology: Theories, Methods, and Applications*, 31(3), 128-136. [SSCI, Q3]
- [7] Summers, R.\*, **Wang, S.**, Abd-El-Khalick, F., & Said, Z. (2018). Comparing Likert scale functionality across culturally and linguistically diverse groups in science education research: An illustration using Qatari students' responses to an attitude toward science survey. *International Journal of Science and Mathematics Education*, 17, 885-903. [SSCI, Q3]
- [6] Perry, M.\*, **Wang, S.**, McConney, M., & Mingle, L. (2017). Discourse structure in Chinese and U.S. elementary fractions lessons. In E. Galindo & J. Newton (Eds.), *Proceedings of the 39th Annual Meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education* (p. 1261). Indianapolis, IN: Hoosier Association of Mathematics Teacher Educators.
- [5] Israel, M.\*, **Wang, S.**, & Marino, M. (2016). A multilevel analysis of diverse learners playing science video games: Interactions between gaming features, learning disability status, reading proficiency, and gender. *Journal of Research in Science Teaching*, 53, 324-345. [SSCI, Q1]
- [4] Lindgren, R.\*, Tscholl, M., **Wang, S.**, & Johnson, E. (2016). Enhancing learning and engagement through embodied interaction with a mixed reality simulation. *Computers & Education*, 95, 174-187. [SSCI, Q1]
- [3] Said, Z., Summers, R.\*, Abd-El-Khalick, F., & **Wang, S.** (2016). Attitudes toward science among Grades 3 through 12 Arab students in Qatar: Findings from a cross-sectional national study. *International Journal of Science Education*, 38(4), 621-643. [SSCI, Q2]
- [2] Abd-El-Khalick, F.\*, Summers, R., Said, Z., **Wang, S.**, & Culbertson, M. (2015). Development and large-scale validation of an instrument to assess Arabic speaking students' attitudes toward science. *International Journal of Science Education*, 37(16), 2637-2663. [SSCI, Q2]
- [1] Rodkin, P.\*, Hanish, L.‡, **Wang, S.**‡, & Logis, H. (2014). Why the bully/victim relationship is so pernicious: a gendered perspective on power and animosity among bullies and their victims. *Development and Psychopathology*, 26(3), 689-704. [SSCI, Q1] [‡ Co-second author]

### ***Selected Research Reports***

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- [6] Boyce, J., Wei, X., & **Wang, S.** (2019). *ST Math: Nonregulatory ESSA standards evidence review & What Works Clearinghouse standards review*. Menlo Park, CA: SRI International.

- [5] Griffiths, R., Boyce, J., **Wang, S.**, & Wetzel, T. (2018). *Quasi-experimental study of Mastering Chemistry: Ohio State University*. Menlo Park, CA: SRI International.
- [4] Griffiths, R., Boyce, J., **Wang, S.**, & Wetzel, T. (2018). *Study of Mastering Chemistry at selective research university*. Menlo Park, CA: SRI International.
- [3] Griffiths, R., Gardner, S., Lundh, P., Shear, L., Ball, A., Mislevy, J., **Wang, S.**, Desrochers, D., & Staisloff, R. (2018). *Participant experiences and financial impacts: Findings from year 2 of achieving the dream's OER degree initiative*. Menlo Park, CA: SRI International.
- [2] House, A., Means, B., Peters Hinton, V., Boyce, J., Wetzel, T., & **Wang, S.** (2018). *Next generation courseware challenge evaluation*. Menlo Park, CA: SRI International.
- [1] Griffiths, R., Mislevy, J., **Wang, S.**, Shear, L., Mitchell, N., Bloom, M., Staisloff, R., Desrochers, D. (2017). *Launching OER degree pathways: An early snapshot of achieving the dream's OER degree initiative and emerging lessons*. Menlo Park, CA: SRI International.

### **Selected Peer-reviewed Conference Presentations (\* Corresponding Author)**

- [21] **Wang, S.\*** (2022, October). *Empirical research on hybrid law degree program*. 8th National Forum on Empirical Education Research, Shanghai, China.
- [20] **Wang, S.\*** (2021, October). *Empirical research on evaluation of open education resource degrees*. 7th National Forum on Empirical Education Research, Shanghai, China.
- [19] Griffiths, R., Mislevy, J., & **Wang, S.\*** (2021, April). *Impacts of an open education resource degree initiative on college student outcomes*. American Educational Research Association (AERA) Annual Conference, Online.
- [18] **Wang, S.\*** (2020, December). *When is adaptive learning effective learning?* Invited to present at the 4th Global Summit on Artificial Intelligence and Big Data in Education, Beijing, China, and Online.
- [17] **Wang, S.\*** (2020, November). *Personalised and adaptive learning*. Invited to present at UNIR and Birzeit University, Online.
- [16] **Wang, S.\***, Xu, Y., Christensen, C., Cui, W., Tong, R., Thai, K., Ball, A., Shear, L. (2020, April). *Learning mathematics with an adaptive system: Relationships between student characteristics, system usability, and student motivation*. American Educational Research Association (AERA) Annual Conference, Online.
- [15] **Wang, S.\*** (2019, November). *Mathematics across cultures: a systemic functional linguistics approach*. Paper presented at the Text Linguistics Conference, Qingdao, China.

- [14] **Wang, S.\***, Xu, Y., Bienkowski, M., Cui, W., Thai, K., & Tong, R. (2019, May). *Examining Chinese middle school students' motivation using the reduced instructional materials motivation survey (RIMMS): A validation study in the education technology setting*. Paper presented at the International conference on Artificial Intelligence and Adaptive Education (AIAED), Beijing, China.
- [13] Gardner, S.\*, Griffiths, R., Mislevy, J., Shear, L., **Wang, S.**, & Ball, A. (2019, April). *Open educational resources degree initiative student survey: Methods and findings*. Paper presented at the American Educational Research Association (AERA) Annual Conference, Toronto, Ontario.
- [12] Summers, R.\*, Hutchison, A., & **Wang, S.** (2019, April). *Exploring students' intentions to engage with science: A side-by-side comparison of two theoretical models*. Paper presented at the National Association for Research in Science Teaching (NARST) Annual Conference, Baltimore, MD.
- [11] **Wang, S.\***, Bienkowski, M., Cui, W., Feng, M., Pei, Y., & Yin, T. (2019, April). *Putting technology to the test: Efficacy studies of an adaptive system in China*. Paper presented at the American Educational Research Association (AERA) Annual Conference, Toronto, Ontario.
- [10] **Wang, S.\***, & Yin, T. (2019, February). *How good is good enough? Learning from rigorous evaluations of an AI-powered education system*. Presented at the DeveloperWeek, San Francisco, CA.
- [9] **Wang, S.\***, & Perry, M. (2018, July). *A Quantitative Approach to Understand Classroom Discourse: Hierarchical Generalized Linear Modeling of Conjunctions in Mathematics Lessons*. Poster presented at the 45th International Systemic Functional Congress (ISFC), Boston, MA.
- [8] Griffiths, R.\* , Christensen, C., & **Wang, S.** (2018, April). *An Evaluation of a First-of-its-Kind Hybrid Law Program*. Paper presented at the American Educational Research Association (AERA) Annual Conference, NYC, NY.
- [7] **Wang, S.\***, & Perry, M. (2016, April). *Conjunction is more than just a language unit: A comparative study of conjunctions in U.S. and Chinese mathematical lessons*. Paper presented at the American Educational Research Association (AERA) Annual Conference, Washington, D.C.
- [6] **Wang, S.\*** (2015, November). *Understanding communicative features in mathematics learning differences between U.S. and China through analyses of conjunctions*. Invited to present at the College of Education Mathematics Education Talks. University of Illinois, Urbana-Champaign, IL.
- [5] Lindgren, R.\*, Tscholl, M., **Wang, S.**, & Johnson, E. (2015, April). *Enhancing learning and*

*engagement through full-body interactions with an immersive science simulation.* Paper presented at the American Educational Research Association (AERA) Annual Conference, Chicago, IL.

- [4] Rodkin, P.\*, **Wang, S.**, Logis, H.\*, & Hanish, L. (2014, July). *Popularity and aggression differences in bully-victim dyads.* Paper presented at the International Society for the Study of Behavioral Development (ISSBD) Biennial Conference, Shanghai, China.
- [3] Israel, M.\*, **Wang, S.**, Marino, M., & Basham, J. (2014, April). *Diverse learners playing science video games.* Paper presented at the American Educational Research Association (AERA) Annual Conference, Philadelphia, PA.
- [2] Johnson, E.\*, Lindgren, R., Tscholl, M., & **Wang, S.** (2014, April). *Metacognitive scaffolding effects on conceptual learning in a whole-body interactive simulation environment.* Paper presented at the American Educational Research Association (AERA) Annual Conference, Philadelphia, PA.
- [1] **Wang, S.\***, Mingle, L. A., McConney, M., & Perry, M. (2011, April). *Mathematics across cultures: Teacher-facilitated horizontal discourse in Chinese and U.S. Mathematics lessons.* Paper presented at the American Educational Research Association (AERA) Annual Conference, New Orleans, LA.

### ***Media Coverage and Mentions***

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- “Breaking language barriers: supporting non-native English-speaking students.” *Times Higher Education (THE)*. 2022, December.
- “Learning futures that are adaptive to your specific needs.” *Thrive Global*. 2021, June.
- “Adopting open educational resources can help students. But it takes time, money and effort.” *EdSurge*. 2020, February.
- “Squirrel Ai Learning by Yixue Group gives a thesis presentation at the AERA Education Summit on innovative educational and learning styles.” *PR Newswire*. 2019, June.
- “To build a great time for technology developers.” *China Daily; Consumption Daily; PR Newswire*. 2019, April.
- “Creating a ‘home’ for fellow Illini.” *Illinois College of Education News*. 2018, August.
- “MEteor’ teaches students about astrophysics.” *U.S. National Science Foundation Multimedia Gallery*. 2016, November.
- “Embodied learning, physics & 7<sup>th</sup> graders.” *U.S. National Science Foundation Homepage*. 2016, April.

“Seventh-graders learn astrophysics through mixed-reality computer simulation.” *Phys.org*. 2016, March.

“Seventh-graders learn astrophysics through mixed-reality computer simulation.” *Illinois News Bureau*. 2016, March.

## **Professional Service**

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### **Editorial Board Member**

*European Journal of Education* [SSCI, Q2]

### **Guest Editor**

*Frontiers in Psychology* [SSCI, Q1]: *Rigorous and High-Quality Efficacy Studies of Educational Technology Interventions*

### **Proposal Reviewer**

U.S. National Science Foundation (NSF) Proposal Review Panel

### **Professional Organization Chair**

IEEE Chair for Recommended Practices for Evaluation of Adaptive Instructional Systems (IEEE P2247.3™)

### **Conference Session Chair**

*Empirical Research on the Evaluation and Measurement of Educational Technology*. 8th National Forum on Empirical Education Research (FEER, 2022)

*Empirical Research on Evaluation and Measurement in Higher Education*. 7th National Forum on Empirical Education Research (FEER, 2021)

*Quantitative and Mixed-Method Studies in Mathematics Education Session*, American Educational Research Association Annual Conference (AERA, 2021)

*Evaluation and Assessment in Higher Education Session*, Seventh Forum on Empirical Education Research (EER, 2021)

*Research on Evaluation Session*, American Educational Research Association Annual Conference (AERA, 2021)

*Technology and Mathematics Session*, American Educational Research Association Annual Conference (AERA, 2020)

*Artificial Intelligence Session*, International Conference on Computer Supported Education (CSEDU, 2020)

### **Journal Reviewer**

*Applied Psychological Measurement*

*Current Psychology*  
*Education and Information Technologies*  
*Educational Data Mining*  
*Educational Studies*  
*Educational Studies in Mathematics*  
*European Journal of Education*  
*Frontiers in Education*  
*Frontiers in Psychology*  
*International Journal of Educational Research*  
*International Journal of Science and Mathematics Education*  
*International Journal of Science Education*  
*International Journal of STEM Education*  
*Mathematical Thinking and Learning*  
*Journal of Computer Assisted Learning*  
*Journal of Research in Science Teaching*  
*Mathematics*  
*PLOS One*

**Conference Reviewer**

American Educational Research Association Annual Conference (AERA)  
Artificial Intelligence in Education International Conference (AIED)  
International Conference on Computer Supported Education (CSEDU)  
Educational Data Mining (EDM)

**Book Proposal Reviewer**

Cambridge University Press  
Springer