

# Shiyan Jiang

---

---

North Carolina State University; College of Education  
310G Poe Hall, 2310 Stinson Drive Raleigh, NC 27695  
Email: sjjiang24@ncsu.edu; Tel: 305-989-7326

## CURRENT EMPLOYMENT

---

**Assistant Professor: Learning Design and Technology**, College of Education, North Carolina State University, July 2019 – present. (Coordinator of Graduate Certificate in Learning Analytics)

## EDUCATION

---

**Ph.D. in Teaching and Learning (Specialization in Technology-enhanced STEM Education)**, University of Miami (UM). 2018. Advisor: **Dr. Ji Shen**

## PRIOR EMPLOYMENT

---

**Post-doctoral Associate: Language Technologies Institute**, School of Computer Science, Carnegie Mellon University, 2018-2019. Advisor: **Dr. Carolyn P. Rosé**

**Graduate Researcher: Teaching and Learning**, School of Education and Human Development, University of Miami, 2013- 2018. Advisor: **Dr. Ji Shen**

**Research Internship: Information Sciences and Technology**, Pennsylvania State University, Summer 2017. Advisor: **Dr. Mary Beth Rosson**

**Data Visualization Developer Internship: Sun Sentinel**, FL, Summer 2016.

**Research Internship: WISE**, University of California, Berkeley, Summer 2015. Advisor: **Dr. Marcia Linn**

**Research Internship: Concord Consortium**, MA, Summer 2014. Advisor: **Dr. Charles Xie**

## RESEARCH

---

### *Interest*

- Computer science education
- Data science education
- AI (Artificial Intelligence) education
- Identity development
- Learning analytics
- Data visualization
- Technology-mediated learning

## ***Funded project***

Project Narrative Modeling with StoryQ: Integrating Mathematics, Language Arts, and Computing to Create Pathways to Artificial Intelligence Careers (**NSF ITEST # 1949110**; \$1.5 M; Co-PI); June 2020 – June 2023

- Create and test StoryQ, a web-based text mining and narrative modeling platform;
- Develop, implement, and test a Narrative Modeling with StoryQ curriculum;
- Investigate instructional and technological strategies for helping youth understand core AI concepts and develop interests in AI careers.

Project Learning Analytics in STEM Education Research Institute (LASER) (**NSF ECR # 2025090**; \$ 1 M; Co-PI); September 2020 – September 2023

- Provide professional development for 150 early and mid-career STEM education researchers in Learning Analytics (LA);
- Investigate research questions related to developing inclusive LA communities and creating diverse pathways for LA.

Project Enhancing Undergraduate Learning About Biomechanics and Data Science Through Augmented Reality and Self-motion Data (**NSF IUSE # 2013451**; \$600 K; Co-PI); September 2020 – September 2023

- Build an augmented learning platform to capture human motion data;
- Develop curriculum modules for undergraduate biomechanics and data science courses;
- Investigate student learning in integrated biomechanics and data science learning environments.

Project Promoting Youth Critical Data Literacy Through Computing and Community Storytelling with Data (**NC State Data Science Workshop Award**; \$ 56 K; PI); August 2021 – May 2022

- Develop technology prototypes for supporting youth in reasoning about data from socioscientific perspectives.
- Investigate research questions related to broadening participation in data science and data visualization and exploring designs for promoting critical data and media literacies.

Project Multimodal AI literacy: Supporting K-12 AI Education through Composing with Multiple Modes (**NC State Catalyst Grant**; \$ 10 K; PI); January 2020 – June 2020

- Develop a free summer camp that engages youth in learning AI concepts;
- Investigate research questions related to supporting K-12 AI education with multimodal composition.

Project Learning COVID-19 with Data Visualizations (**NC State Faculty Research and Professional Development**; \$ 5 K; PI); July 2020 – July 2021

- Provide opportunities for middle and high school youth to engage in understanding, exploring, and evaluating data visualizations about COVID-19.
- Investigate research questions related to supporting data science education in remote learning.

### ***Proposals under review***

**Jiang, S.**, Ware, H., Coleman, E., Sung, S., & Bulseco, D. (PI). *Health Equity for Active Learning (HEAL)* (DRK-12 program), \$ 3M.

### ***Peer - reviewed journal article (\*denotes student co-author)***

**Jiang, S.**, Tatar, C. \*, Huang, X., Sung, S. H., & Xie, C. (2021). Augmented reality in science laboratories: Investigating high school students' navigation patterns and their effects on learning performance. *Journal of Educational Computing Research*, 07356331211038764.

**Jiang, S.**, Shen, J., Smith, B. E., & Kibler, K. (2020). Science identity development: How multimodal composition mediates role-taking as scientist in a media-rich learning environment. *Educational Technology Research and Development*. 1-26.

**Jiang, S.** & Kahn, J. (2020). Data wrangling practices and collaborative interactions with aggregated data. *International Journal of Computer-Supported Collaborative Learning*. 1-25.

Kahn, J., & **Jiang, S.** (2020). Learning with large, complex data and visualizations: youth data wrangling in modeling family migration. *Learning, Media and Technology*, 1-16.

Shen, J., Chen, G., Barth-Cohen, L., **Jiang, S.**, & Eltoukhy, M. (2020). Connecting computational thinking in everyday reasoning and programming for elementary school students. *Journal of Research on Technology in Education*, 1-21.

**Jiang, S.**, Shen, J., & Smith, B. E. (2019). Designing discipline-specific roles for interdisciplinary learning: two comparative cases in an afterschool STEM+ L programme. *International Journal of Science Education*, 1-24.

**Jiang, S.**, Smith, B. E., & Shen, J. (2019). Examining how different modes mediate adolescents' interactions during their collaborative multimodal composing processes. *Interactive Learning Environments*, 1-14.

Smith, B. E., Shen, J., & **Jiang, S.** (2019; invited article). The science of storytelling: Middle schoolers engaging with socioscientific issues through multimodal science fictions. *Voices from the middle*, 26(4).

Barth-Cohen, L., **Jiang, S.**, Shen, J., Chen, G., & Eltoukhy M. (2018). Interpreting and navigating multiple representations as central to computational thinking in a robotics programming environment. *Journal for STEM Education Research*.

Sung, S., Shen, J., **Jiang, S.**, & Chen, G. (2017). Comparing the effects of dynamic computer visualization on undergraduate students' understanding of osmosis with randomized posttest-only control group design. *Research and Practice in Technology Enhanced Learning*.

Chen, G., Shen, J., Barth-Cohen, L., **Jiang, S.**, Huang, X., Eltoukhy, M. (2017). Assessing elementary students' computational thinking in everyday reasoning and robotics programming. *Computer & Education*, 109, 162-175.

### ***Special Issue – refereed (Guest editor)***

British Journal of Educational Technology Special Issue (2022): *Data science education across the disciplines*.

**Peer - reviewed conference proceeding**

- Finzer, W., Chao, J., Rosé, C., & **Jiang, S.** (2022). StoryQ—An online environment for Machine Learning of text classification. *Proceedings of the 12th AAAI Symposium on Educational Advances in Artificial Intelligence (EAAI-22)*.
- Akram, B., Yoder, S. \*, Tatar, C. \*, & **Jiang, S.** (2022). Towards an AI-infused interdisciplinary curriculum for middle-grade classrooms. *Proceedings of the 12th AAAI Symposium on Educational Advances in Artificial Intelligence (EAAI-22)*.
- Chao, J., Finzer, W., Rosé, C., **Jiang, S.**, Yoder, M. \*, ... Tatar, C. \*, & Wiedemann, K. (2022). StoryQ: A web-based Machine Learning and text mining Tool for K-12 Students. *Proceedings of the 53<sup>rd</sup> ACM Technical Symposium on Computer Science Education (SIGCSE)*.
- Yoder, S. \*, Tatar, C. \*, Aderemi, I. \*, Boorugu, S. \*, **Jiang, S.**, & Akram, B. (2021). Gaining insight into effective teaching of AI problem-solving through CSEDM: A case study. *Proceedings of the 5th Educational Data Mining in Computer Science Education (CSEDM) Workshop*.
- Tatar, C. \*, Yoder, M. \*, Coven, M. \*, Wiedemann, K., Chao, J., Finzer, W., **Jiang, S.**, & Rosé, C. (2021). Modeling unstructured data: Teachers as learners and designers of technology-enhanced Artificial Intelligence curriculum. *Proceedings of the Annual Meeting of international Society of the Learning Sciences (ISLS)*.
- Jiang, S.**, Huang, X., Xie, C., Sung, S., & Yalcinkaya, R. \* (2020). Augmented scientific investigation: Support the exploration of invisible “fine details” in science via Augmented Reality. *Proceedings of the 19th ACM International Conference on Interaction Design and Children (IDC)*, London, UK.
- Jiang, S.** & Kahn, J. (2020). Data patterns and missing data: Complex issues in designs for learning with aggregated data in family migration context. *Proceedings of the 14<sup>th</sup> International Conference of the Learning Sciences (ICLS)*, Nashville, USA.
- Jiang, S.**, Yang, K., Suvarna, C., Casula, P., Zhang, M., & Rosé, C. (2019). Applying rhetorical structure theory to student essays for providing automated writing feedback. *Proceedings of the Workshop on Discourse Relation Parsing and Treebanking 2019* (pp. 163-168).
- Jiang, S.** & Kahn, J. (2019; nominee of best paper). Data wrangling practices and processes in modeling family migration narratives with big data visualization technologies. *Proceedings of the 13<sup>th</sup> International Conference of the Computer Supported Collaborative Learning (CSCL)*, Lyon, France.
- Jiang, S.**, Shen, J., Smith, B., & Kibler, K. (2018). Examining science identity development in disciplinary role-taking multimodal composing environment. *Proceedings of the 13<sup>th</sup> International Conference of the Learning Sciences (ICLS)*, London, UK.
- Smith, B., Shen, J., **Jiang, S.**, Chen, G., Hamaoui, M., & Torralba, J. (2018). Multimodal reflection: Adolescents remixing and sharing their experiences in an informal STEM+L academy. *Proceedings of the 13th International Conference of the Learning Sciences (ICLS)*, London, UK.
- Jiang, S.**, Shen, J., & Smith, B. (2016). Integrating science and writing in multimedia science fictions: Investigating student interactions in role-taking. *Proceedings of the 12<sup>th</sup> International Conference of the Learning Sciences (ICLS)*, Singapore.

Shen, J., Chen, G., Barth-Cohen, L., **Jiang, S.**, & Eltoukhy, M. (2016). Developing a language-neutral instrument to assess fifth graders' computational thinking. *Proceedings of the 12<sup>th</sup> International Conference of the Learning Sciences (ICLS)*, Singapore.

**Jiang, S.**, Shen, J., Sun, Y. (2015). Conceptualizing, analyzing, and visualizing massive data on student engagement in MOOCs: A literature review. *Proceedings of the 11<sup>th</sup> International Conference of the Computer Supported Collaborative Learning (CSCL)*, Gothenburg, Sweden.

### **Book chapter**

Fiacco, J\*, **Jiang, S.**, Adamson, D., & Rosé, C. (in press). Learning Analytics. In International encyclopedia of education (4rd ed.).

Shen, J., Smith, B. E., & **Jiang, S.** (2020). Integrating multimodal composing technology (MCT) in interdisciplinary learning. In L. C. de Oliveira & A. M. Menda (Eds.), *English language teaching methods, approaches, and lessons*. Charlotte, NC: Information Age Publishing.

Shen, J., **Jiang, S.**, & Liu, O. L. (2015). Reconceptualizing a college science learning experience in the new digital era: A review of literature. In X. Ge, D. Ifenthaler, J.M. Spector (Eds.) *Full steam ahead: Emerging technologies for STEAM* (pp. 61-79). New York: Springer.

### **Manuscripts under review** (#denotes equal contribution)

**Jiang, S.** (**abstract accepted** for a special issue in the journal of *Educational Technology & Society*; full manuscript under review). Towards broadening participation: Investigating adolescents' participation trajectories in a collaborative multimodal composing learning environment.

**Jiang, S.**, Nocera, A., Tatar, C. \*, Chao, J., Wiedemann, K., Finzer, W., & Rosé, C. (**abstract accepted** for a special issue in the journal of *Learning Media and Technology*; full manuscript under review). "Machine learns patterns in data": An empirical analysis of students' modeling texts with real-world datasets.

**Jiang, S.**, Tatar, C. \*, Yoder, M. \*, Chao, J., Wiedemann, K., Finzer, W., & Rosé, C. (**abstract accepted** article for a special issue of *British Journal of Educational Technology*; full manuscript under review). Knowledge development in quantifying and modeling unstructured data.

#**Jiang, S.**, Herbel-Eisenmann, B., Kahn, J., Lim, V., Peralta, M. \*, & Rubel, L. (**invited** article for a special issue in the journal of *Research in Mathematics Education*; minor revision) Critical mathematical literacy: A response to the global precarity of girls & women.

#Kahn, J., Herbel-Eisenmann, B., **Jiang, S.**, Peralta, M. \*, Lim, V., & Rubel, L. (**invited article** for a special issue in the journal of *Educational Technology & Society*; minor revision). Notice, Wonder, Feel, Act, and Reimagine: A framework for social justice and equity in data science education.

#Lim, V., Herbel-Eisenmann, B., **Jiang, S.**, Kahn, J., Peralta, M. \*, & Rubel, L. (**invited article** for a special issue in the journal of *ZDM*; full manuscript under review) From maths of the morgue to maths for living: A critical perspective on using data visualizations in classrooms during and after times of crisis.

### *Manuscripts in preparation*

**Jiang, S.** (**abstract accepted** for a special issue in the journal of *Learning Media and Technology*; in preparation). Blurring the boundaries of current and future selves: Students' STEM identity development in a multimodal composing learning environment.

**Jiang, S.**, Tatar, C. \*, Yoder, S. \*, & Akram, B. (in preparation). Investigating the impact of authentic AI research on preparing teachers to implement AI curriculum.

Rahimi, S., **Jiang, S.**, Almond, R., & Shute, V. (**abstract accepted** for a special issue of *Journal of Learning Analytics*; in preparation) Feature engineering and Machine Learning to refine the validity of a Stealth assessment of physics understanding in an educational physics game.

### *Presentation (Selected)*

Tatar, C. \* & **Jiang, S.** (2022, April). An empirical analysis of high school students' understanding of AI through modeling texts. To be presented at the annual conference of American Educational Research Association (AERA), Hybrid.

Tatar, C. \* & **Jiang, S.** (2021, November). Designing an Artificial Intelligence curriculum with high school teachers and students. To be presented at the Annual International Convention of the Association for Educational Communications and Technology (AECT), Online

Tang, H. & **Jiang, S.** (2021, November). Agency in engineering design: Understanding how students balance the tradeoff between criteria and constraints in authentic epistemic practices. To be presented at the Annual International Convention of the Association for Educational Communications and Technology (AECT). (**Selected as a Featured Research in RTD**)

Rubel, L. H., Peralta, L. M. \*, Herbel-Eisenmann, **Jiang, S.**, B., Kahn, J., & Lim, V. Y. (2021, October). Theorizing Data Science Education: An Intersectional Feminist Perspective on Data, Power, and "Playing the Game" To be presented at the 43rd Annual Conference of the North American Chapter of the International Group for the Psychology of Mathematics Education (PME-NA 2021).

Tatar, C. \* & **Jiang, S.** (2021, April). Effects of Augmented Infrared Reality Technology on Learning Achievement: Case of High School Students. Presented at the annual conference of American Educational Research Association (AERA), Online.

Peralta, L. M. \*, Rubel, L. H., Herbel-Eisenmann, B., Kahn, J., Lim, V. Y., & **Jiang, S.** (2021, April). What's Going on in "What's Going on in This Graph?" Paper presented at the Annual Meeting of the American Education Research Association (AERA), Online.

Yalcinkaya, A. \* & **Jiang, S.** (2020, November). Augmented Scientific Investigation: Making Invisible Visible to the Unaided Eye via Augmented Reality. Presented at the Annual International Convention of the Association for Educational Communications and Technology (AECT), Online

**Jiang, S.**, & Kahn, J. (2020, April). Storytelling with data visualizations: Narrative patterns in modeling family migration narratives. Poster to be presented at the annual conference of American Educational Research Association (AERA), San Francisco, CA. (Cancelled)

**Jiang, S.** (2020, January). Data wrangling practices and learning with aggregated data in talk-in-interaction. **Invited** virtual seminar, Concord Consortium.

**Jiang, S.** (2019, October). Visual analytics of learning data. **Invited** virtual lecture, Research Methods & Technologies course, University of Arizona.

**Jiang, S.**, Shen, J., & Smith, B.E. (2019, April). Patterns and trajectories of an adolescent's participation during an integrated STEM and Digital Literacies program. Paper presented at the annual conference of American Educational Research Association (AERA), Toronto, Canada.

Kahn, J. & **Jiang, S.** (2019, April). Youth data wrangling and modeling family migration. Paper presented at the annual conference of American Educational Research Association (AERA), Toronto, Canada.

Smith, B. E., Kolovou, M., **Jiang, S.**, Ran, H., Torralba, J., & Shen, J. (2019, April). Multidimensional meaning-making: Adolescents leveraging visuals and sounds in their multimodal science fictions. Paper presented at the annual conference of American Educational Research Association (AERA), Toronto, Canada.

Chen, G., Shen, J., **Jiang, S.**, Barth-Cohen, L., & Eltoukhy, M. (2018, April). Linking elementary students' problem-solving process to computational thinking. Paper presented at the 2018 annual conference of American Educational Research Association (AERA), New York City, NY.

**Jiang, S.** & Cong, Q. (2017, September). Exploring the impact of students' academic usage of mobile devices on technostress and academic performance: A double-edged sword. Paper presented at the annual conference of Association for Learning Technology (ALT), Liverpool, UK.

**Jiang, S.**, Smith, B.E., & Shen, J. (2017, April). Peer Interaction in multimodal composition: The story behind the scenes. Paper presented at the annual conference of American Educational Research Association (AERA), San Antonio, TX.

Barth-Cohen, L., **Jiang, S.**, Shen, J., Chen, G., & Eltoukhy, M., (2017, April). Elementary school students' computational thinking practices in a robotics-programming environment. Poster presented at the annual conference of American Educational Research Association (AERA), San Antonio, TX.

Shen, J., Smith, B., **Jiang, S.**, Kibler, K., Chen, G., & Irina, M. (2017, October). Examining middle school students' collaborative multimodal composing through disciplinary identity development. Poster presented at the Annual International Convention of the Association for Educational Communications and Technology (AECT), Jacksonville, FL.

**Jiang, S.**, Smith, B.E., & Shen, J. (2016, October). Exploring multimodal composition in collaborative digital learning environments. Paper presented at the Annual International Convention of the Association for Educational Communications and Technology (AECT), Las Vegas, NV.

**Jiang, S.**, Shen, J., & Smith, B. (2016, April). Assessing students' scientific literacy in collaborative science fiction writing. Poster presented at the 2016 Annual Meeting of the American Educational Research Association (AERA), Washington, D.C.

Sung, S., Shen, J., **Jiang, S.**, & Chen, G. (2016, April). The effect of including dynamic computer visualizations on assessing college students' interdisciplinary understanding of osmosis. Poster

presented at the 2016 Annual Meeting of the American Educational Research Association (AERA), Washington, D.C.

Xie, C., Nourian, S., **Jiang, S.** (2015, April). Performance assessment of engineering design using process analytics based on CAD software. The National Association for Research in Science Teaching (NARST) Conference 2015, Chicago, IL.

Avalos, M. A., Bengochea, A., Malova, I., **Jiang, S.**, Carlo, M., & Augustin, J. (2014, December). Vocabulary instruction for English learners then and now: Do we have it right for the future? Paper presented at the 64<sup>th</sup> Annual Conference of the Literacy Research Association (LRA), Marco Island, FL.

Shen, J., **Jiang, S.**, Cheng, G., & Namdar, B. (2014, October). Designing the innovative Knowledge Organization System (iKOS) for science learning. Poster presented at the Annual International Convention of the Association for Educational Communications and Technology (AECT), Jacksonville, FL.

### *Other*

Tatar, C. \*, Chao, J., & **Jiang, S.** (2021). A technology-enhanced high school AI curriculum, published online.

**Jiang, S.** (2016). A technology-enhanced curriculum: Integrating STEM learning with data visualization, published online (www.wise.berkeley.edu; projectID = 18753).

## **TEACHING**

---

### *Graduate Level*

**Instructor of ECI 587: Machine Learning in Education**, North Carolina State University, Spring 2021, Fall 2021. Taught graduate student courses about the application of Machine Learning in educational contexts; **R & Python programming**. (core course in NC State Learning Analytics graduate certificate program)

**Instructor of ECI 519: Data Visualization in Education**, North Carolina State University, Fall 2019 and Spring 2020. Taught courses about the application of data visualization in educational contexts; **D3.js programming**. (core course in NC State Learning Analytics graduate certificate program)

**Instructor of ECI 709: Learning Sciences Seminar**, North Carolina State University, Spring 2021. Taught courses in Learning sciences for doctoral students.

**Instructor of ECI 510: Research Applications in Curriculum and Instruction**, North Carolina State University, Fall 2020. Taught courses about introductions to educational research.

**Invited speaker of SCS 11344: Machine Learning in Practice**, Carnegie Mellon University, Fall 2018. Taught courses in Machine Learning for graduate students.

### *Undergraduate level*

**Invited speaker of TAL 543: Science Instruction in the Secondary School**, UM, Spring 2016. Taught courses about STEM-related classroom technologies for pre-service teachers.



**Teaching assistant of TAL 323: Science Instruction in the Elementary School**, UM, Fall 2013/Fall 2014. Led class discussions and graded student assignments.

***Teacher professional development***

**Instructor** of educational technology workshops for in-service teachers, Summer 2018 (n = 12); Fall 2017 (n = 73); Spring 2016 (n = 30); Fall 2014 (n = 25). Trained and supervised in-service teachers to implement technology-enhanced STEM projects.

***K-12 teaching***

**Instructor** of multiple formal and informal programs associated with Project STEM+L, including

- Afterschool program for 5<sup>th</sup>-8<sup>th</sup> graders from Miami-Dade public schools (Summer 2018; Spring 2018; Fall 2017; Summer 2017; Fall 2015).
- Elective STEAM course for Henry S. West Laboratory School (Fall 2017; Fall 2016)
- Afterschool program for Ponce de Leon Middle School (Spring 2015)

**Instructor** of project First Star UM Academy, UM, Summer 2017. Taught digital composing to guide under-represented high schoolers to envision future professions.

**DOCTORAL STUDENTS SUPERVISED**

---

***Doctoral dissertation (co-)chair***

Rabia Yalcinkaya (co-chair with Dr. Angela Wiseman)

Cansu Tatar (co-chair with Dr. Kevin Oliver)

Yuru Zhang (co-chair with Dr. Kevin Oliver)

Cigdem Meral (co-chair with Dr. Meghan Manfra)

***Doctoral Dissertation Committees***

Ruth Akintunde (Department of Computer Science, graduated 2021)

Zhen Guo (Department of Computer Science, graduated 2021)

Andrew Emerson (Department of Computer Science, in progress)

Nischal Shrestha (Department of Computer Science, in progress)

Gina Bai (Department of Computer Science, in progress)

Li Li (Department of Industrial and Systems Engineering, graduated 2021)

Grace Wonaphotimuke (College of Design, in progress)

Lili Wang (Department of Teacher Education and Learning Sciences, in progress)

**SERVICE**

---

**Special issue guest editor:** British Journal of Educational Technology, Data science education across the disciplines, 2021 (co-edit with Victor Lee and Josh Rosenberg)

**Journal review:** International Journal of Computer-Supported Collaborative Learning; Science Education; Computers & Education; Educational Technology Research & Development; Journal of Science Education and Technology; Journal of Educational Computing Research; Studies in Educational Evaluation; IEEE Internet of Things

**NSF panel review:** ITEST; DRK-12; AISL; IUSE

**Conference review:** ICLS; AERA; AECT

**Workshop for AERA-ICPSR PEERS Data Hub, A LASER Focus on Understanding and Improving STEM Education, 2021** (co-present with LASER team)

**Search committee member,** Executive Director of Data Science Academy at NC State, 2021

## **HONORS AND AWARDS**

---

FI Scholar, Friday Institute for Educational Innovation, North Carolina State University, 2020

Catalyst Grant Award, North Carolina State University, 2020

Early Career Workshop Award, Association for Educational Communications and Technology, 2020

Early Career Workshop Award, International Society of the Learning Sciences, 2019

Bronze Award, International Serious Play, Treasure Key, 2017

Innovation Award in Learning Technology Design and Development, the 2nd e-ICON World Contest, South Korea, 2012

## **PROFESSIONAL MEMBERSHIP**

---

International Society of the Learning Sciences (ISLS)

Association of Educational Communication and Technology (AECT)

American Educational Research Association (AERA)

Interaction Design and Children (IDC)