

Liru Hu

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EDUCATION

- 2022– School of Complex Adaptive Systems, **Arizona State University**, **M.S.** in Complex Systems Science, Current GPA: 4.0/4.0
- 2017–2023 Academic Unit of Human Communication, Development, and Information Sciences, Faculty of Education, **The University of Hong Kong**, **Ph.D.**
Research focus: Dialogic collaborative problem solving; computer-supported collaborative learning; dialogic education; visual learning analytics
Doctoral thesis: Developing productive peer talk in dialogic collaborative problem solving: A participatory visual learning analytical approach
Supervisors: Dr. Gaowei Chen; Prof. Carol K. K. Chan
- 2021 Summer School, **Carnegie Mellon University**
Topic: Intelligent tutoring system
- 2021 Summer School, **Radboud University**
Topics: Complexity methods for behavioral science, human-computer interaction, and clinical skills in the treatment of anxiety and depression.
- 2016–2017 School of Education and Human Development, **University of Massachusetts Boston**
Transfer graduate student
- 2014–2017 School of Education, **Shaanxi Normal University**, **M.S.**, GPA: 90/100; Rank: 1/23
Research focus: Learning sciences and technology
Master's thesis: Application strategy of students as co-creators: A design-based research study on a graduate bilingual course of educational technology research methods
Supervisor: Prof. Baohui Zhang
- 2016 Summer School, **Peking University**
Topic: Learning sciences and future education
- 2015 Summer School, **Peking University**
Topic: Learning sciences and technologies
- 2008–2012 Institute of Education, **Nanjing University**, **B.S.**, GPA: 4.42/5.00, Rank: 1/7
Bachelor's thesis: The development status and quality evaluation of edutainment at home and abroad
Supervisor: Prof. Hongxia Zhang
 Minor Degree in Management Science

RESEARCH EXPERIENCE

- 2024 **Empowering Math Discourse: A Tech-Enhanced Program for Productive Peer Talk in Collaborative Problem Solving** (UTEP University Research Institute Grant, USD 6030)
Project aim: This study aims to develop a peer-talk teaching program called mathematics dialogue and thinking to promote academically productive discussions among primary school students.
My role: PI
- 2023 **Scaling-up C-For-Chinese@JC in kindergarten sector to cultivate culturally responsive education** (The Hong Kong Jockey Club Charities Trust)
PI: Dr. Sau Yan Hui (Home and Community Engagement and Support)

Project aim: The “C-for-Chinese@JC” project, funded by The Hong Kong Jockey Club Charities Trust, aims to create culturally responsive education for kindergartens in Hong Kong. By 2026, the project aims to support 42,000 kindergarten students, including 5,100 NCS, EM students and their families, and support their transitions to primary education.

My role: Research manager

- Evaluated and facilitated the efficacy of the whole project
- Investigate funds of knowledge of ethnic minorities
- Support non-profit organizations in providing culturally responsive service

2021–2023 **A visualization-enhanced video-based e-learning platform (V2 e-Platform) for teachers and students (FBL, #ITB/FBL/7026/20/P, HKD 3,647,464)**

PI: Dr. Gaowei Chen

Project aim: Transform educational videos into high-efficacy, low-cost resources for improving teaching and learning, ultimately benefitting a wide range of teachers and students at the local, regional and international levels

My role: Research assistant

- Improved the learning analytical tool
- Analyzed data and reported project findings

2017–2018 **Technology-supported teacher learning about effective classroom talk: Impact on students’ participation and achievement in mathematics (GRF/ECS, #27606915, HKD 679,000)**

PI: Dr. Gaowei Chen

Project aim: Promote teachers’ professional development in effective classroom talk based on a learning analytical tool called Classroom Discourse Analyzer

Method: Longitudinal experimental design

My role: Research assistant

- Improved the learning analytical tool
- Prepared training materials for the monthly teacher workshops
- Analyzed data and reported project findings

2014–2016 **Instructional innovation project (RMB 30,000)**

PI: Prof. Baohui Zhang

Project aim: Construct a participatory learning environment by involving students as co-designers of a curriculum to improve curriculum design and promote student learning

Method: Design-based research

My role: Research and teaching assistant

- Organized the course preparation meetings each week and assisted the instruction
- Participated in instructional design and curriculum resource development
- Designed questionnaires, interview outline, and observation tools
- Analyzed data and reported project achievements

2015–2016 **National project on educational research norms and methodologies (RMB 20,000)**

PI: Prof. Baohui Zhang

Project aim: Analyze and synthesize current various research norms and methodologies in the field of education to guide educational research

My role: Research assistant

- Did a literature review of existing writing norms about educational research
- Drafted the chapter of “writing norms of educational research”
- Revised the draft through collaboration with a journal editor

2011–2012 **Investigation project on the major abolishment (RMB 3,000)**

PI: Liru Hu

Consultant: Prof. Xinmin Sang

Project aim: Investigate the reasons for the closure of the Educational Technology major at Nanjing University, conclude its achievements and lessons, explore suggestions for its future development and enlightenment for other universities in China

Project achievements: over 500 pages of a report with a 7-minute CD

My role: PI

- Organized and led a project team, including six core members, one consultant and eight representatives of other grades, allocated tasks and called for meetings.
- Decided the design of the interviews and questionnaires and the outline of the final report.
- Analyzed the collected data and wrote the first part of the final report
- Finished one first-author journal paper

TEACHING EXPERIENCE

2023– **Instructor**, College of Education, The University of Texas at El Paso

1. Quantitative Research Methods I (Fall Semester)

- Postgraduate level and hybrid mode (Quote: 15 students)

2. Educational Technology (Spring Semester)

- Undergraduate level and online mode (Quote: 30 students)

3. Curriculum Plan: Secondary School (Spring Semester)

- Undergraduate level and online mode (Quote: 30 students)

2022–2023 **Guest lecturer**, Faculty of Education, The University of Hong Kong

Course: Quantitative Research Methods II (a compulsory course for postgraduate students)

- Delivered a lecture (1.5 hours) on regression analysis and answered students' questions (0.5 hour). In the lecture, I introduced essential procedures and key issues in doing regression analysis using one of my own studies as an example.
- Delivered a lecture (2.5 hours) on meta-analysis and answered students' questions (0.5 hour). In the lecture, I shared my own study and discussed some key issues in doing meta-analysis.

2021 **Mathematics teacher**, a primary school, Jiangsu, China

Course: Mathematics Dialogue and Thinking

- Designed the course including pedagogies, assessments, and schedules
- Developed all course materials including tasks, instructional videos, and activity materials
- Delivered the instruction for two classes with three lessons a week throughout one whole semester

2015–2016 **Teaching assistant**, School of Education, Shaanxi Normal University

Course: Educational Technology Research Methods (a compulsory bilingual course for graduate students)

- Assisted in pedagogy design and preparation of course materials
- Assisted in grading of students' work

2016 **English teacher**, Haiyang Education and Training Institution, Shaanxi, China

- Helped grade six primary school students prepare for the English entrance exam to middle schools

PRESENTATIONS: ORAL

June 2023 The International Society of the Learning Sciences Annual Meeting (**ISLS 2023**), Montréal, Canada.

Title: Exploring the trajectory of learning and using productive peer talk moves

June 2023 The International Society of the Learning Sciences Annual Meeting (**ISLS 2023**), Montréal, Canada.

Title: iTalk-iSee: A participatory visual learning analytical tool for productive peer talk

June 2021 The International Society of the Learning Sciences Annual Meeting (**ISLS 2021**), online

Title: Turn-usurping in dialogic collaborative problem solving

- April 2021 The **AERA 2021** Virtual Annual Meeting
Title: Explore the participation of students of few words in dialogic collaborative problem-solving
- July 2020 The Tenth International Conference on Complex Systems (**ICCS 2020**), virtual conference
Title: Towards a complex systems perspective on the temporal patterns of dialogic collaborative problem solving
- Oct. 2019 The Global Education Symposium at the College of Education, the University of Illinois at Urbana-Champaign, Illinois, the United States
Title: Multimedia effect in problem solving: A meta-analysis
- Aug. 2019 The 23rd Junior Researchers of EARLI Conference (**JURE 2019**) and the 18th European Association for Research on Learning and Instruction Conference (**EARLI 2019**), Aachen, Germany
Title: Students' agentic engagement—A design-based study on how to involve students in curriculum design
- June 2019 The 13th International Conference on Computer Supported Collaborative Learning (**CSCL 2019**), Doctoral Consortium, Lyon, France
Title: Temporal patterns and visualizations of peer talk: Toward understanding the process and performance of dialogic collaborative problem-solving
- May 2018 The 22nd Global Chinese Conference on Computers in Education (**GCCCE 2018**), Guangzhou, China
Title: Implementation of students as co-creators of curricula: A design-based study on a bilingual graduate course
- July 2016 International Conference on Blending Learning 2016 (**ICBL 2016**), Beijing, China
Title: Blended learning: Beyond technology to pedagogical structure design
- Apr. 2016 The 2nd Annual International Conference on Education (**ICEDU 2016**), Bangkok, Thailand
Title: The impact of time constraints on flow experience in an educational game

PRESENTATIONS: POSTER

- Apr. 2019 The **AERA 2019** Annual Meeting, Toronto, Canada
Title: The impact of time constraints on flow experience in an educational game
- June 2018 The 13th International Conference of the Learning Sciences (**ICLS 2018**), London, UK
Title1: The impact of video-based and data-supported professional development on classroom dynamics
Title2: Interactions among sources of cognitive load: an EEG perspective

PUBLICATIONS: JOURNAL PAPERS

- *Hu, L., Chen, G., & Wu, J. (2023). Teaching talk for thinking: The efficacy of a peer talk teaching program for improving group thinking. *Thinking Skills and Creativity* (**IF: 3.652**), 48, 101291.
- *Hu, L., & Chen, G. (2023). A systematic review and meta-analysis of productive peer talk moves. *Journal of Behavioral Education* (**IF: 2.57**), 1-33.
- *Hu, L., Wu, J., & Chen, G. (2022). iTalk-iSee: A participatory visual learning analytical tool for productive peer talk. *International Journal of Computer Supported Collaborative Learning* (**IF: 5.611**), 1–29. <https://doi.org/10.1007/s11412-022-09374-w>
- *Hu, L. & Chen, G. (2022). Exploring turn-taking patterns during dialogic collaborative problem solving. *Instructional Science* (**IF: 2.255**), 50(1), 63–88. <https://doi.org/10.1007/s11251-021-09565-2>
- *Hu, L. & Chen, G. (2021). Towards a complex systems perspective on the temporal patterns of dialogic collaborative problem solving. *Frontiers in Psychology* (**IF: 4.232**), 12, 735534. <https://doi.org/10.3389/fpsyg.2021.735534>
- *Hu, L. & Chen, G. (2021). A systematic review of visual representations for analyzing collaborative discourse. *Educational Research Review* (**IF: 10.207**), 34, 100403. <https://doi.org/10.1016/j.edurev.2021.100403>

- *Hu, L. (2021). Conceptualization and operationalization of group thinking sustainability in dialogic collaborative problem solving. *Thinking Skills and Creativity* (IF: 3.652), 42, 100964. <https://doi.org/10.1016/j.tsc.2021.100964>
- *Hu, L., Chen, G., Li, P., & Huang, J. (2021). Multimedia effect in problem solving: A meta-analysis. *Educational Psychology Review* (IF: 8.240), 33(4), 1717–1747. <https://doi.org/10.1007/s10648-021-09610-z>
- *Chen, G., Lo, C. K., & Hu, L. (2020). Sustaining online academic discussions: Identifying the characteristics of messages that receive responses. *Computers & Education* (IF: 11.182), 156, 103938. <https://doi.org/10.1016/j.compedu.2020.103938>
- *Hu, L., & Chen, G. (2020). Visual learning analytics: Exploring the role of visualization in learning analytics. *Open Education Research (CSSCI)*, 26(2), 63–74. (In Chinese).
- *Zhang, B., Hu, L., Li, P., Qin, J. (2017). Implementation of Students as Co-Creators of Curricula: A design-based study on a graduate bilingual course Educational Research Methods. *Open Education Research (CSSCI)*, 23(6), 36–48. (In Chinese).
- *Hu, L., Zhang, B., Cheng, L., & Zhang, J. (2017). Problems of educational technology undergraduate major construction in comprehensive research university: Based on the investigation research on major abolishment in A University. *Modern Distance Education Research (CSSCI)*, (2), 77–87. (In Chinese).
- *Hu, L. (2016). Deconstruct and reconstruct high school information technology elective courses based on maker culture. *e-Education in Primary and Secondary Schools*, (1), 26–29. (In Chinese).
- *Han Y., Zhang, B., & Hu, L. (2016). Analysis of interaction-based participatory instructional design and implementation effects for graduate students. *Graduate Students Education (CSSCI)*, (1), 36–43. (In Chinese).
- *Hu, L., & Zhang, B. (2016). Flipped classroom and flipped learning: Analyze the efficacy of “flipping”. *Journal of Distance Education (CSSCI)*, 34(4), 52–58. (In Chinese).
- *Hu, L., Zhang, B., & Zhou, R. (2016). Trends of online learning platform development: From the perspective of the evolution of software. *e-Education Research (CSSCI)*, 37(1), 72–78. (In Chinese).
- *Hu, L., M. J., Zhang, B. & Song, L. (2016). To flip or not to flip? Beyond an educational fad to research-based classrooms: An interview with Professor Michael J. Jacobson from the University of Sydney. *Chinese e-Educational Research (CSSCI)*, (5), 138–141. (In Chinese).
- *Hu, L., Ding J., Ma, Y., & Zhang, B. (2016). Impact of time constraints on flow experience: An empirical study on educational game. *Open Education Research (CSSCI)*, 22(2), 113–120. (In Chinese).
- *Hu, L., & Zhang, B. (2016). Blended learning: Toward technology-enhanced pedagogical structure design. *Modern Distance Education Research (CSSCI)*, (4), 21–31. (In Chinese).
- *Hu, L. (2015). Five contradictions on domestic edutainment. *e-Education in Primary and Secondary Schools*, (9), 39–42. (In Chinese).
- *Hu, L., Chen, G. & Wu, Jiajun. Improving participation equity in dialogic collaborative problem solving: A participatory visual learning analytical approach. *Journal of Computer Assisted Learning*. (Under review)
- *Hu, L. & Chen, G. Dialogic collaborative problem-solving. *Psychology in Schools* (under review).

PUBLICATIONS: CONFERENCE PAPERS

- Hu, L., Wu, J., & Chen, G. (2023, June 10–15). iTalk–iSee: A participatory visual learning analytical tool for productive peer talk. *Proceedings of the International Society of the Learning Sciences (ISLS) Annual Meeting 2023* (p.13). Montréal, Canada.
- Hu, L., Chen, G., & Wu, J. (2023, June 10–15). Exploring the Trajectory of Learning and Using Productive Peer Talk Moves. In *Proceedings of the 16th International Conference on Computer-Supported Collaborative Learning-CSCL 2023*, pp. 193-196. International Society of the Learning Sciences.

- Hu, L. (2021, June 7–11). Turn-usurping in dialogic collaborative problem solving. *Proceedings of the International Society of the Learning Sciences (ISLS) Annual Meeting 2021* (pp. 59–66). Online. **[Runner-up of Best Student Paper Award]**
- Hu, L. (2021, Apr 13–16) Explore the participation of students of few words in dialogic collaborative problem-solving [Roundtable Session]. *AERA Annual Meeting*, online.
- Hu, L. (2020, June 19–23). When productive talk fails to generate good outcome: temporality of peer talk in dialogic collaborative problem solving. *Proceedings of the 14th International Conference of the Learning Sciences (ICLS2020)* (pp. 905–906), Nashville, TN, USA
- Chen, G., Lo, C. K., & Hu, L. (2020, June 19–23). Message responsiveness during online discussions. *Proceedings of the 14th International Conference of the Learning Sciences (ICLS2020)* (pp. 130–137), Nashville, TN, USA
- Hu, L. (2020, June 19–23). Conceptualization and quantification of thinking sustainability in dialogic collaborative problem solving. *Proceedings of the 14th International Conference of the Learning Sciences (ICLS2020)* (pp. 333–340), Nashville, TN, USA
- Hu, L. & Chen, G. (2020, Apr 17–21) Turn-taking patterns in dialogic collaborative problem solving [Roundtable Session]. *AERA Annual Meeting* San Francisco, CA
- Hu, L., Chen, G., & Chan, C. K. K. (2019, June 17–21). Temporal patterns and visualizations of peer talk: Toward understanding the process and performance of dialogic collaborative problem-solving [Doctoral Consortium]. *Proceedings of the 13th International Conference on Computer Supported Collaborative Learning (CSCL)*, Lyon, France.
- *Chen, G., Chan, K., Chan, C., Yu, J., Hu, L., Wu, J., & Resnick, L. (2019, June 17–21). Designing learning analytics for teacher learning: An analytics-supported teacher professional development (ASTPD) approach. *Proceedings of the 13th International Conference on Computer Supported Collaborative Learning (CSCL)* (pp. 959–960), Lyon, France.
- *Chen, G., Chan, C. K. K., Yu, J., Hu, L., Clarke, S., & Resnick, L. B. (2018, June 24–27). The impact of evidence-based professional development on classroom dynamics. *Proceedings of the 13th International Conference of the Learning Sciences (ICLS)* (pp.1769–1770), London, UK.
- Hu, L. & Zhang, B. (2018, May 25–29). Implementation of students as co-creators of curricula: A design-based study on a bilingual graduate course Research Methods in Educational Technology. *Doctoral Student Forum Proceedings of the 22nd Global Chinese Conference on Computers in Education (GCCCE 2018)* (pp.5–8). Guangzhou: South China Normal University. (In Chinese).
- Hu, L. (2016, July). Blended learning: Beyond technology to pedagogical structure design. *Proceedings of the International Conference on Blending Learning* (pp. 221–232). Springer International Publishing.

WORK EXPERIENCE

- 2023– Assistant Professor of STEM Education, the University of Texas at El Paso
- 2023 Research manager (at the rank of assistant research officer), the University of Hong Kong
- Evaluate the effectiveness of the "C-for-Chinese@JC" project which aims to improve the non-Chinese speaking ethnic minority students for Chinese proficiency and social competence.
- 2017 **Product manager**, LAIX Inc., Shanghai
- Analyzed log data to assess users' experience of Dongni, an intelligent adaptive English learning system
 - Investigated the designs of similar adaptive learning systems and compared them to the design of Dongni
 - Assisted with the test of the adaptivity of Dongni Beta by answering testers' questions and collecting testers' feedback
 - Proposed new design features for Dongni

- 2012–2014 **Planning supervisor**, Strategy Planning Department in CEO's Office, Suning Commerce Group Co., Ltd., Jiangsu
- Managed the size of personnel force by controlling the staffing quotas of branch companies
 - Investigated the communication efficiency of branches and the headquarter to propose solutions for more efficient procedures
 - Assisted in changing the organization structures to support online business
- 2012 **Training specialist**, Suning University, Suning Commerce Group Co., Ltd., Jiangsu
- Assisted in training new staffs and newly promoted managers
 - Investigated the training needs of various departments and helped them develop training courses

AWARDS

- June 2021 Runner-up in Best Student Paper Award of the Annual Meeting of the International Society of the Learning Sciences
- Apr. 2019 Second Runner-up of Interdisciplinary Competition, the University of Hong Kong
- Dec. 2018 Best Presenter Award at the University of Hong Kong
- Sept. 2017 Hong Kong Ph.D. Fellowship Scheme at the University of Hong Kong
- May. 2017 Excellent Master's Thesis Award at Shaanxi Normal University
- Nov. 2016 National Scholarship at Shaanxi Normal University
- 2012–2013 Outstanding Employee of Suning Commerce Group Co., Ltd.
- 2009–2012 National Scholarship for Encouragement at Nanjing University
- Apr. 2011 Silver Medal for the amateur football contest in the 17th Games of Jiangsu Province

SKILLS

- Teaching** Certificate in Teaching and Learning in Higher Education issued by the Centre for the Enhancement of Teaching and Learning at the University of Hong Kong
- Computing** Excellent implementation skills in R, SPSS, and MPLUS
Familiarity with Python/ C/C++, Adobe Photoshop, 3ds Max, Flash8, DreamweaverCS3, Premiere and MATLAB
- Languages** Mandarin (proficient, native language)
English (fluent, TOEFL: 104/120; GRE: 325/340)
Cantonese (fluent)

PROFESSIONAL ASSOCIATIONS

- 2021–2024 **Program Committee member**, Global Chinese Conference on Computers in Education (GCCCE)
- 2019–2022 **Student membership**, American Educational Research Association (AERA)
- 2018–2022 **Student membership**, The International Society of the Learning Sciences (ISLS)