

WONKYUNG JANG

Assistant Professor

Department of Instructional Leadership and Academic Curriculum

Jeannine Rainbolt College of Education

The University of Oklahoma

4502 E. 41st Street, Office 4W116, Tulsa, OK 74132-2553

Phone: (919) 360-3560 | E-mail: wkjang@ou.edu

EDUCATION

University of North Carolina at Chapel Hill (UNC)	Ph.D.	2022	Education (Early Childhood Education)
	M.Ed.	2021	Early Childhood Intervention and Family Support
	M.S.	2021	Statistics
Yonsei University, South Korea	B.S.	2015	Child and Family Studies
	B.A.	2015	Applied Statistics
University of Oslo, Norway	Exchange Student	2013	Special Needs Education

PROFESSIONAL POSITION

2022- Assistant Professor, Department of Instructional Leadership and Academic Curriculum, Jeannine Rainbolt College of Education, University of Oklahoma

RESEARCH INTEREST

Jang studies B-K (Birth-through-Kindergarten) education and data science. His interests lie in investigating (1) physical, social, and linguistic environment of early childhood classrooms and the relation between enhanced language learning and classroom experience and (2) implementation science approaches in early care and education (ECE). He is particularly interested in how ECE stakeholders can embrace the power of “Big Data” to help children overcome developmental challenges, provide the simple joy of play, and tackle pressing social justice challenges.

LICENSURE & CERTIFICATION

Graduate Certificate in Computational Linguistics (UNC Department of Linguistics) (2021)

Teacher of Kindergarten (Ages 3-5) (Ministry of Education, South Korea) (2015)

Teacher of Child Care Center (Ages 0-5) (Ministry of Health and Welfare, South Korea) (2015)

Sergeant (Republic of Korea Army) (2010)

HONOR & AWARD

Summer Graduate School Student Support Program (UNC Graduate School) (2022)

Tanner Award for Excellence in Undergraduate Teaching (UNC Office of the Provost) (2021)

[Featured] {[School of Education](#)} {[Department of Statistics](#)} {[The Well](#)} {[UNC](#)}

Best Poster Award (Conference on Artificial Intelligence in Smart Cities) (2021)

ISLS & Wallace Foundation Scholarship (International Society of Learning Sciences) (2021)

Nancy Blanche Norman Scholarship (UNC School of Education) (2021)

Alumni Association in the U.S. Award (Yonsei University College of Human Ecology) (2019)

Graduate Transportation Grant Award (UNC Graduate School) (2017)

FUNDED PROJECT

Early Childhood Teachers' Characteristics, Complex Talk, and Children's Language and Literacy Development

NAECTE Foundation Doctoral Scholarship (National Association of Early Childhood Teacher Educators) (2021)

PI: Dr. Jang, W., Advisors: Drs. Harriet Able and Margaret Burchinal

[Featured] { [School of Education](#) }

TEACHING EXPERIENCE

Assistant Professor, University of Oklahoma Jeannine Rainbolt College of Education

EDEC 3533: Infant/Toddler Development and Care (Fall 2022)

Teaching Assistant, UNC School of Education

EDUC 181: Introduction to Human Development and Family Studies (Fall 2018, Spring 2019)

EDUC 405: Parenting and Family Life Education (Fall 2020, Spring 2021)

EDUC 408: Research Methods in Human Development (Fall 2019, 2020, Spring 2020, 2021)

EDUC 601: Innovative and Critical Pedagogies in Early Childhood (Summer 2021)

EDMX 767: Infant/Toddler Curriculum and Learning Environments (Summer 2021; Co-instruct)

Teaching Associate, UNC Department of Psychology and Neuroscience

PSYC 210: Statistical Principles of Psychological Research (Fall 2017, Spring 2018)

Teaching Fellow (Instructor), UNC Department of Statistics and Operations Research

STOR 155: Introduction to Data Models and Inference (Summer 2020, Summer 2021)

STOR 320: Introduction to Data Science (Summer 2021)

Teaching Fellow (Instructor), UNC Department of Asian and Middle Eastern Studies

KOR 102: Elementary Korean 2 (Spring 2017)

Guest Lecturer, UNC, PSYC 250: Child Development (Summer 2019, Fall 2019); KOR 101:

Elementary Korean 1 (Fall 2017); KOR 203: Intermediate Korean 1 (Fall 2017)

RESEARCH EXPERIENCE

Research Assistant, UNC FPG Child Development Institute (12.2017-07.2022)

Educare Learning Network; Early Learning Network; ECERS-3 Psychometric Assessment Team

Research Assistant, UNC School of Education (01.2017-07.2022)

CAEP Standards and edTPA Teacher Assessment Team; Educational Technology Lab; Early Learning Lab; Causal Inference Lab

JOB-MARKET PAPER

[3] **Jang, W.**, & Burchinal, M. (2021). Complex preschool teacher talk, activity context, and child outcome.

[2] **Jang, W.**, & Leech, K. (2021). The contextual modulation of adult-child language interaction: Semantic network connectivity.

[1] **Jang, W.**, & Educare Learning Network Investigators. (2021). Application of survival analysis and machine learning to understand early care and education teacher turnover.

PEER-REVIEWED PUBLICATION

Book

[3] Clifford, R., Yazejian, N., **Jang, W.**, & Jigjidsuren, D. (2021). *A guide to analyzing and understanding ECERS-3 scores*. Teachers College Press.

Article

- [2] Cohen-Vogel, L., Little, M., **Jang, W.**, Burchinal, M., & Bratsch-Hines, M. (2021). A missed opportunity? Instructional content redundancy in pre-k and kindergarten. *AERA Open*, 7(1), 1-15.

Conference Proceeding

- [1] **Jang, W.**, Francisco, J., Ranganathan, N., McCarroll, K. M., & Ryoo, K. (2020). Using machine learning to understand students' learning patterns in simulations. In Gresalfi, M. and Horn, I. S. (Eds.), *The Interdisciplinarity of the Learning Sciences, 14th International Conference of the Learning Sciences (ICLS) 2020, Volume 5* (pp. 2593-2596). Nashville, TN: International Society of the Learning Sciences.

UNDER REVIEW

- [1] **Jang, W.** (2022). Gendered language in early childhood: Using computational linguistics algorithms.

MANUSCRIPT IN PREPARATION

Linguistic Environment of Early Childhood Classrooms

- [11] **Jang, W.**, & Leech, K. (2022). Contextual modulation of adult-child conversation: Semantic network connectivity and children's vocabulary development. Manuscript in preparation.
- [10] **Jang, W.** (2022). The effects of code-switching picture books on language and literacy development of young dual language learners (DLLs): Using semantic and phonological network algorithms. Manuscript in preparation.
- [9] **Jang, W.** (2022). A probabilistic model for learning mental-content and emotional verbs in early childhood: Using dependency parser and distributional complexity models. Manuscript in preparation.
- [8] **Jang, W.** (2022). Semantic network growth in typical and late talkers: Using longitudinal network algorithms. Manuscript in preparation.

Implementation Science Approaches in Early Care and Education

- [7] **Jang, W.** (2022). Teachers' characteristics, complex talk, and children' language and literacy development: Mixed method research. Manuscript in preparation.
- [6] **Jang, W.** (2022). Peer effects on language and literacy outcomes: Using Bayesian estimations of spillover effects. Manuscript in preparation.
- [5] **Jang, W.** (2022). Cross-linguistic transfer in DLLs: Using deep-learning-based longitudinal item response theory. Manuscript in preparation.
- [4] **Jang, W.** (2022). How teacher-child relationship influences DLL retention in early care and education: Using machine-learning-based survival analyses. Manuscript in preparation.
- [3] Bryant, D., Yazejian, N., Kuhn, L., **Jang, W.**, & Educare Learning Network Investigators. (2022). The influence of personal and program characteristics on teacher turnover: Using multiplicative and additive hazards regression models. Manuscript in preparation.

Social Power and Early Care and Education in Cross-Cultural Contexts

- [2] **Jang, W.** (2022). Cultural models of ECE distributive leadership in Norway, South Korea, and the United States: Using political sentiment analysis and computational grounded theory. Manuscript in preparation.
- [1] **Jang, W.**, & Jun, H. (2022). Cultural models of father Involvement in Norway and South Korea: Using deep-neural-network-based item response theory (Deep-IRT). Manuscript in

Preparation.

SELECTED PRESENTATION

- [23] **Jang, W.**, & Ko, K. (2022, November). Application of regularized regression in child care quality research: Overcoming the reproducibility crisis. Accepted paper at the 84th Annual National Council on Family Relations (NCFR) Conference.
- [22] **Jang, W.**, & Leech, K. (2022, April). Contextual modulation of parent-child conversation: Semantic network connectivity and children's vocabulary development. Poster presented at the 2022 Cognitive Development Society (CDS) Conference, Madison, WI.
- [21] **Jang, W.**, & Burchinal, M. (2022, April). Complex preschool teacher talk, content area, and child outcome. Paper presented at the 2022 American Educational Research Association (AERA) Conference, San Diego, CA.
- [20] **Jang, W.** (2021, November). The contextual modulation of academic language in early care and education: Implications for B-K teacher education. Paper presented at the 2021 National Association of Early Childhood Teacher Educators (NAECTE) Conference.
- [19] **Jang, W.** (2021, November). Using network science as a tool for understanding adult-child language interaction in diverse activity contexts. Paper presented at the 83rd Annual National Council on Family Relations (NCFR) Conference.
- [18] **Jang, W.** (2021, September). Applications of computational grounded theories in inquiry-based learning research. Paper presented at the 30th Annual European Early Childhood Education Research Association (EECERA) Conference.
- [17] **Jang, W.** (2021, June). Cultural models of paternal involvement in early childhood education: Implications for preservice and inservice teacher education. Paper presented at the 2021 National Association of Early Childhood Teacher Educators (NAECTE) Conference.
- [16] **Jang, W.** (2021, April). Applications of natural language processing (NLP) in educational research. Poster presented at the 2021 Conference on Artificial Intelligence in Smart Cities. **[Best Poster Award]**
- [15] **Jang, W.**, Yazejian, N., & Clifford, R. (2021, April). Characteristics of programs, teachers and classrooms: Do features mandated by Head Start Act predict classroom quality? Paper presented at the 2021 Early Childhood Environment Rating Scale (ECERS) International Conference.
- [14] **Jang, W.**, Garber, K., Foster, T., Burchinal, M., Bratsch-Hines, M., & Franco, X. (2021, April). Complex preschool teacher-child talk, types of activity settings, and child outcomes. Poster presented at the 2021 Society for Research in Child Development (SRCD) Conference.
- [13] Foster, T., Garber, K., **Jang, W.**, Burchinal, M., & Bratsch-Hines, M. (2021, April). Examining the role of peer effects for dual language learners in pre-kindergarten. Individual Flash Talk at 2021 Society for Research in Child Development (SRCD) Conference.
- [12] **Jang, W.** (2020, November). Word embeddings and their relations to distributional semantics in educational linguistics research. Paper presented at the 16th UNCG Regional Mathematics and Statistics Conference (RMSC).
- [11] **Jang, W.** (2020, November). Inquiry-based learning in early childhood education: Automated text mining analysis of three decades of research literature. Paper presented at the 2020 National Association of Early Childhood Teacher Educators (NAECTE) Conference.

- [10] **Jang, W.** (2020, June). Developing early childhood teachers' literacy pedagogical content knowledge. Paper presented at the 2020 National Association of Early Childhood Teacher Educators (NAECTE) Conference.
- [9] **Jang, W.**, Francisco, J., Ranganathan, N., McCarroll, K. M., & Ryoo, K. (2020, June). Using machine learning to understand students' learning patterns in simulations. Paper presented at the 2020 Biennial International Conference of the Learning Sciences (ICLS) Conference.
- [8] **Jang, W.**, & Wolczynski, N. (2019, November). When early childhood education meets machine learning: Issues with reproducibility and replicability. Paper presented at the 15th UNCG Regional Mathematics and Statistics Conference (RMSC), Greensboro, NC.
- [7] Frederick, H., & **Jang, W.** (2019, November). Teaching human development and family studies through case studies: A multi-cultural and problem-based learning approach. Roundtable Presentation at the 81st Annual National Council on Family Relations (NCFR) Conference, Fort Worth, TX.
- [6] **Jang, W.** (2019, April). Promoting literacy in early childhood education: Tension between psycholinguistics and sociolinguistics. Round Table Session at the 2019 Korean American Educational Research Association (KAERA) Annual Conference, Toronto, Canada.
- [5] **Jang, W.** (2019, April). Aesthetic dimensions of democracy: Analyzing Deweyan pragmatism and Korean democratic education using text mining. Round Table Session at the 2019 American Educational Research Association (AERA) Annual Conference, Toronto, Canada.
- [4] **Jang, W.** (2019, March). Early literacy teacher education: Broadening the definitions of pedagogical content knowledge. Paper presented at the 2019 Southeastern Association of Educational Studies (SEAES) Conference, Chapel Hill, NC.
- [3] **Jang, W.** (2018, March). Power relations in scientific inquiry during dialogic reading with preschoolers. Paper presented at the 2018 UNC School of Education Graduate Research Symposium, Chapel Hill, NC.
- [2] **Jang, W.**, & Jun, H. (2017, November). Scandi daddy and Confucian father in early child education and care: Father involvement in Norway and South Korea from cross-cultural perspectives. Paper presented at the 79th Annual National Council of Family Relations (NCFR) conference, Orlando, FL.
- [1] **Jang, W.**, & Jun, H. (2017, August). Cross-cultural perspectives on paternal involvement in early childhood education. Paper presented at the 27th Annual European Early Childhood Education Research Association (EECERA) conference, Bologna, Italy.

INVITED TALK

- [4] **Jang, W.**, & Kuhn, L. (2021, September). The influence of personal and program characteristics on teacher retention in Educare: Using multiplicative and additive hazards regression models. Seminar Series held by the FPG Child Development Institute, Chapel Hill, NC.
- [3] **Jang, W.** (2021, March). Parent-child interaction corpus analysis: Using computational linguistics and machine learning approaches. Seminar presented at the Lab Meeting held by the FPG Child Development Institute Brain and Early Experiences (BEE) Lab, Chapel Hill, NC.

- [2] **Jang, W.** (2021, February). Applications of hierarchical Bayesian modeling in early childhood research. Seminar presented at the Journal Club held by the FPG Child Development Institute Data Management and Analysis Core (DMAC), Chapel Hill, NC.
- [1] **Jang, W.** (2019, November). How machine learning algorithms can be used to help mine hidden trends and patterns: Using R for visualization and data mining. Workshop presented at the 7th Educare Data Camp held by the FPG Child Development Institute Educare Learning Network team, Chapel Hill, NC.

SERVICE

UNC School of Education GSA Diversity and Equity Chair (09.2021-08.2022)

UNC University Teaching Awards Committee (07.2021-01.2022)

UNC & Duke Wonder of Learning Exhibition on Reggio Emilia (02.2017-04.2017)

REVIEWER FOR CONFERENCE

International Society of the Learning Sciences (ISLS) (2020, 2021)

National Council on Family Relations (NCFR) (2021)

TEACHING EXPERIENCE IN EARLY CHILDHOOD SETTING

Lead Teacher

Banpo Haneul Preschool (Full-time; 02.2016-07.2016); Chapel Hill-Durham Korean School (Part-time; 08.2017-05.2022)

Volunteer Teacher

Catholic Dominic Order (07.2007-08.2007); Yonsei Province Child and Adolescent Center (09.2007-12.2007); Marista Community Center (09.2007-12.2007); Child Fund Korea (07.2011-08.2011); Yonsei University Child Development Research Institute (04.2013-05.2013; 07.2011); Puruni Seocho Preschool (Student Teaching Internship; 07.2013-08.2013); Youngwon Middle School (03.2014-06.2014); Hanyoung Kindergarten (Student Teaching Internship; 03.2014); Yonsei University Rehabilitation School (09.2014-12.2014); Kindergarten of Chongshin University (03.2015-06.2015); Seawell Elementary School Pre-K Classroom (10.2016-06.2017)

PROFESSIONAL AFFILIATION

American Educational Research Association (AERA)

European Early Childhood Education Research Association (EECERA)

International Society of the Learning Sciences (ISLS)

National Association for the Education of Young Children (NAEYC)

National Association of Early Childhood Teacher Educators (NAECTE)

National Council of Family Relations (NCFR) (& Korean Families Focus Group)

Society for Research in Child Development (SRCD) (& Asian Caucus Group)

RESEARCH SKILL

Statistics and Computer Science Coursework (83 credits completed)

Undergraduate-Level Course from Yonsei University

Calculus, Linear Algebra, Mathematical Statistics, Introduction to Statistics, Statistical Method, Sampling Theory, Regression Analysis, Experimental Design, Nonparametric Statistics, Time Series Analysis, Computer Programming, Data Analysis and Design, Practical Risk Management and Statistics

Graduate-Level Course from UNC

Mathematical Statistics, Applied Statistics 1, Introduction to Data Science, Machine Learning, Data Mining, Object Oriented Data Analysis, High-Dimensional Probability with Applications in Statistics and Machine Learning, Text Mining, Extreme Value Theory, Multilevel Modeling, Introduction to Structural Equation Modeling, Statistical Analysis of Educational Data, Secondary Data Analysis, Masters Essay

Other Statistics Training

Causal Inference, Bayesian Statistics, Multivariate Analysis, Item Response Theory, Dyadic Data Analysis, Missing Data Treatment, Meta-analysis, Scale Development

Statistical Package & Database Language

Quantitative Method

R, Python, SAS, STATA, Mplus, MINITAB, SPSS, AMOS, LISREL, JAVA, MS-SQL

Qualitative Method

MAXQDA, ATLAS.ti, NVivo

Data Collection Tool

Environment Rating Scale

Early Childhood Environment Rating Scale (ECERS), Infant/Toddler Environment Rating Scale (ITERS), Family Child Care Environment Rating Scale (FCCERS), School-Age Care Environment Rating Scale (SACERS), Inclusive Classroom Profile (ICP), Pre-K Classroom Assessment Scoring System (CLASS), Early Language and Literacy Classroom Observation (ELLCO), Early Language and Literacy Classroom Observation – Dual Language Learners (ELLCO-DLL), Language Interaction Snapshot (LISn)

Language and Literacy Assessment Tool

Index of Productive Syntax (IPSyn), MacArthur-Bates Communicative Development Inventories (MB-CDIs), Preschool Language Scale (PLS), Narrative Production Task (NPT), Story and Print Concepts Assessment (SPCA), Dynamic Indicators of Basic Early Literacy Skills (DIBELS), Woodcock-Johnson Tests of Cognitive Abilities (WJ), Receptive and Expressive One-Word Picture Vocabulary Test (ROWPVT, EOWPVT)