

Hyejeong Lee

Ph.D. Candidate

Instructional Systems Technology, School of Education

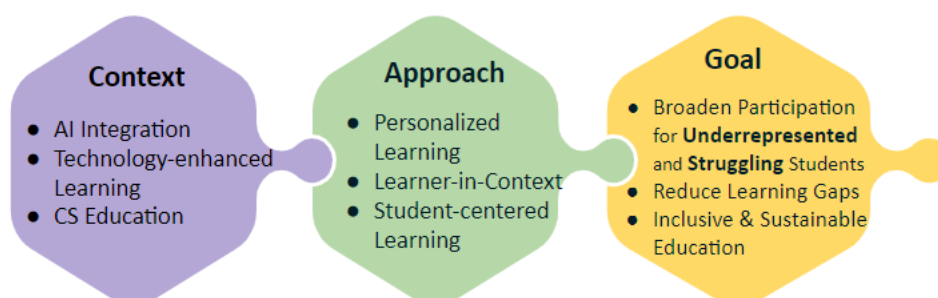
Indiana University Bloomington

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Research Interests



Education

Ph. D. (2020 - Expected 2024)

Instructional Systems Technology

Indiana University Bloomington, USA

M. A. (2016)

Educational Methodology (Focus on Educational Technology)

Korea University, Korea

(Thesis: *A study of the effects of audiovisual materials on learner participation in instruction based on Keller's ARCS motivation theory* 🏆 **Best Thesis Award**)

B. A. (2008)

Elementary Education (Focus on Computer Science Education)

Busan National University of Education, Korea

(Thesis: *Structure of knowledge and classification in elementary computer science curricula*)

Professional Experience

2023-Present	Ethnography Researcher, Charting the Future, Indiana University
2021-2023	Associate Instructor, Indiana University
2022 Summer	Digital Skills Researcher, Center of Excellence for Women & Technology (CEWIT), Indiana University
2020-2021	Graduate Assistant, Indiana University
2018-2020	Head Teacher, Wirye Pureun Elementary School, Seongnam, Korea
2019	Visiting Teacher, Sheldon College, Brisbane, Australia
2017-2018	Teacher, Singapore Korean International School, Singapore
2014-2017	Head Teacher, Jeongja Elementary School, Seongnam, Korea
2012-2017	Special Educator, Seongnam Department of Education
2011-2014	Teacher, Jeongja Elementary School, Seongnam, Korea
2008-2011	Teacher, Sucheong Elementary School, Osan, Korea

Publications

- Lee, H.**, Closser, T., Alghamdi, K., Leftwich, A., Brown, M., & Koressel, J. Current experiences and factors of future enrollment in computer science for high school students. *TechTrends*. (In press) [Submission version](#)
- Katuka, G., Chakraborty, S., **Lee, H.**, Dhama, S., Earle-Randell, T., Celepkolu, M., Boyer, K.E., Glazewski, K., Hmelo-Silver, C., & McKlin, T. (2024, March). Integrating natural language processing in middle school science classrooms: An experience report. In *Proceedings of the 55th ACM Technical Symposium on Computer Science Education* (In press). [Submission version](#)
- Hickey, D., Harris, T., & **Lee, H.** (2022). Dimensions of assessment in online and open education in terms of purpose, function, and theory. In O. Zawacki-Richter and I. Jung (Eds), *Handbook of Open, Distance, and Digital Education* (pp. 1325-1338). Springer.

https://link.springer.com/content/pdf/10.1007/978-981-19-0351-9_80-1.pdf

- Lee, H.** (2018). Foley mixing project. In *Teacher Guidebook for STEAM Education*. Ministry of Education & Korean Science Foundation. Ministry of Korean Education Press (Written in Korean).
- Hickey, D., Harris, T., & **Lee, H.** Reviewing the research on assessment principles, formats, and levels in online and open learning. *Educational Research Review*. (Under revision)
- Lee, H.**, & Lee, J. Fostering teachers' competencies to implement AI-integrated curricula: Lessons learned from the generative AI workshop. *International Journal of Artificial Intelligence in Education*. (Under review)
- Lee, H.**, & Brush, T. What teachers should know about assessment in problem-based learning: Unpacking considerations and strategies. *Journal of Teacher Education*. (Under review)

(Manuscript in Preparation)

- Lee, H.**, & Lee, J. Inclusive and equitable artificial intelligence in education: Factors affecting students' artificial intelligence literacy. (Manuscript ready, Final revision phase, *Target journal: International Journal of Artificial Intelligence in Education*)
- Lee, H.**, & Park, I. Students as co-creators of a curriculum in technology-rich environments to foster student-centered learning with technology. (Manuscript ready, Final revision phase, *Target journal: Computers & Education*)
- Lee, H.**, & Park, I. Test mode effects on repeated academic performance: Using a linear mixed model. (Manuscript ready, Final revision phase, *Target journal: Educational Technology Research and Development*)
- Kim, J., **Lee, H.**, Leftwich, A., Brush, T., & Koressel, J. How to prepare preservice teachers to teach CS: National perspectives survey (Manuscript ready, Final revision phase, *Target journal: Teaching and Teacher Education*)
- Lee, H.**, & Brush, T., Hmelo-Silver, C., Bonk, C., & Kwon, K. Intelligent tutoring systems for elementary students in Mathematics to enhance personalized learning (Under progress, *Target journal: Computers & Education*).

- Lee, H., & Brush, T.** When are intelligent tutoring systems more effective? A meta-synthesis of meta-analyses. (Under progress, *Target journal: International Journal of Artificial Intelligence in Education*)
- Lee, H., & Lee, J.** What do students perceive towards AI? (Under progress, *Target journal: Interactive Learning Environments*)
- Lee, H.** Inclusive AI in Education: Using a topic modeling (Under progress, *Target journal: International Journal of Artificial Intelligence in Education*)
- Lee, H., & Brush, T.** Teachers' perspectives on teaching computer and information literacy (Under progress, *Target journal: International Journal of Artificial Intelligence in Education*)

(Thesis)

- Lee, H.** (2016). *A study of the effects of audiovisual materials on learner participation in instruction based on Keller's ARCS motivation theory*. [Master's thesis, Korea University].  **Best Thesis Award**
- Lee, H.** (2008). *Structure of knowledge and classification in an elementary computer science curriculum*. [Bachelor's thesis, Busan National University of Education].

Presentations

(Conference Presentations)

- Lee, H., Leftwich, A., Closser, T., Alghamdi, K., Brown, M., & Koressel, J.** (2023, October). *Teaching considerations and the roles of teachers in computer science*. Association for Educational Communication and Technology (AECT) Annual Meeting, Orlando, FL.
- Kim, J., Lee, H., Chakraborty, S., Johnson, V., Leftwich, A., Glazewski, K., Hmelo-Silver, C., Scribner, A., Mott, B., & Lester, J.** (2023, October). *AI curriculum implementation with elementary school teachers: Challenges encountered and a path forward*. Association

- for Educational Communication and Technology (AECT) Annual Meeting, Orlando, FL.
- Katuka, G., Chakraburty, S., **Lee, H.**, Dhama, S., Earle-Randell, T., Celepkolu, M., Boyer, K.E., Glazewski, K., Hmelo-Silver, C., & McKlin, T. (2024, March). *Integrating natural language processing in middle school science classrooms: An experience report*. 55th ACM Technical Symposium on Computer Science Education, Portland, OR. (Accepted)
- Lee, H.**, & Lee, J. (2024, April). *ChatGPT teacher workshop: Promoting teachers' ability to implement AI-integrated curricula*. American Educational Research Association (AERA) Annual Meeting. (Under review)
- Lee, H.**, & Park, I. (2024, April). *Students as co-creators of a curriculum in technology-rich environments*. American Educational Research Association (AERA) Annual Meeting. (Under review)
- Chakraburty, S., **Lee, H.**, Smyslova, D., Johnson, V., Glazewski, K., Hmelo-Silver, C., Boyer, K.E., Celepkolu, M., & Katuka, G. (2024, April). *An inquiry-based learning approach to a Natural Language Processing curriculum for middle school students*. American Educational Research Association (AERA) Annual Meeting. (Under review)
- Hickey, D., Harris, T., & **Lee, H.** (2024, April). *A pragmatic review of research on assessment principles, formats, and levels in online teaching and learning*. American Educational Research Association (AERA) Annual Meeting. (Under review)
- Lee, H.**, & Park, I. (2024, June). What are the *students' roles in technology-rich environments?* International Society of the Learning Sciences (ISLS) Annual Meeting. (Submitted)
- Lee, H.**, & Seo, M. (2023, March). *Equity in computer science education: Social and cultural background differences in computer and information literacy*. IST Conference, Bloomington, IN.
- Harris, T., **Lee, H.**, & Hickey, D. (2023, March). *Assessment principles, formats, & levels for online and open learning contexts*. IST Conference, Bloomington, IN.
- Seo, M., & **Lee, H.** (2023, March). *Decision-making mechanisms: A study in boundary crossing*. IST Conference, Bloomington, IN.
- Lee, H.**, Alghamdi, K., Closser, T., Leftwich, A., Brown, M., Yan, G., & Koressel, J. (2022, October). *The predictors of future computer science enrollment: Who will continue to*

enroll? Association for Educational Communication and Technology (AECT) Annual Meeting, Las Vegas, NV.

Lee, H. (2022, October). *How do we promote motivation and academic performance?*

Student-created multimedia using technology. Association for Educational Communication and Technology (AECT) Annual Meeting, Las Vegas, NV.

Kim, J., **Lee, H.**, Koressel, J., Chu, L., Leftwich, A., Brush, T., Childs, J., DeLyser, A. L., Yadav, A., & Simon, B. (2022, October). *How to prepare elementary preservice teachers to teach CS: Multiple case studies.* Association for Educational Communication and Technology (AECT) Annual Meeting, Las Vegas, NV.

Jantaraweragul, K., Jeon, M., **Lee, H.**, Glazewski, K., Hmelo-Silver, C., Leftwich, A., Scribner, A., Mott, B., & Lester, J. (2022, October). *A problem-based learning approach to teaching elementary students artificial intelligence and life science conservation.* Association for Educational Communication and Technology (AECT) Annual Meeting, Las Vegas, NV.

Lee, H. (2022, March). *Media-based instruction.* IST Conference, Bloomington, IN.

Closser, T., Leftwich, A., **Lee, H.**, Alghamdi, K., Yan, G., Brown, M., & Koressel, J. (2022, March). *A Survey of Indiana high school computer science students: Reasons for continuing and dropping in computer science.* IST Conference, Bloomington, IN.

Lee, H., Kim, J., Leftwich, A., Brush, T., Chu, L., Koressel, J., Childs, J., DeLyser, A. L., Yadav, A., & Simon, B. (2022, March). *Elementary preservice teacher education for computer science.* IST Conference, Bloomington, IN.

Leftwich, A., Brush, T., Childs, J., Kim, J., Koressel, J., **Lee, H.**, DeLyser, A. L., Yadav, A., & Simon, B. (2021, November). *How are we preparing our preservice teachers to teach CS? A national perspective.* Association for Educational Communication and Technology (AECT) Annual Meeting, Chicago, IL.

Kwon, K., Jeon, M., Nadir, H., Sankaranarayanan, R., Gok, S., Chavez, N., & **Lee, H.** (2021, November). *Embodied learning for computational thinking education.* Association for Educational Communication and Technology (AECT) Annual Meeting, Chicago, IL.

Lee, H. (2018, October). *How do we integrate subjects? Foley mixing project for elementary students*. Conference for STEAM Education. Korea Advanced Institute of Science and Technology (KAIST), Daejeon, Korea.

(Selected Invited Talks)

Lee, H. (2023, August). *Advanced Tools for Canvas for Returning AIs*. Indiana University, USA

Lee, H. (2022, August). *Associate Instructors Orientation Gallery Walk*, Indiana University, USA

Lee, H. (2022, May). *How do teachers enhance students' AI literacy?* Bongdam Elementary School, Korea

Research Projects

- **[Charting the Future](#)**: This project centers on creating classrooms that produce equitable class outcomes and optimizing support for the critical student populations on campus. In addition, we suggest STEM and gateway courses be redesigned for greater student success, equity, and belonging.
- **[IntegrateAI](#)**: Project IntegrateAI centers on inquiry-driven projects to investigate scientific questions using natural language data for middle school students. Students are engaged in innovative Natural Language Processing (NLP) experiences to foster their knowledge and skills. We also assist teachers in developing AI competencies and enable them to feel prepared to integrate inquiry-based NLP into their classrooms.
- **[PrimaryAI](#)**: Project PrimaryAI focuses on AI in elementary education. This project addresses creating engaging learning experiences integrating AI and life science by leveraging immersive problem-based learning.
- **[CS for ED](#)**: National CS Education Case Studies. We seek to create a public repository to serve as ongoing inspiration for teacher education programs as they work to include CS.

- **CS Experiences in High School:** We examine positive and negative experiences in computer science for high school students so that we can broaden CS participation for underrepresented students.
- **Digital Survival Skills for Women:** This project aims to help female students improve their digital literacy skills. As a Digital Expert researcher, I participated in working at CEWIT, the Center of Excellence for Women & Technology, encouraging women to pursue technology to enhance diversity in the CS areas.
- **PBL Tech:** This project centers on developing PBL video cases, helping educators implement the PBL approach, and developing effective problem-solving skills
- **Online Education and Assessment:** This project examines online education and distance education focusing on assessment. We are also conducting research related to technology-enhanced assessments such as ChatGPT.

Teaching

(Higher Education)

- Teaching Assistant, R711 Readings in Instructional Systems Technology (Asynchronous), Fall 2023, Indiana University
- Instructor, W200 Using Computers in Education (In-person), Spring 2023, Indiana University
- Instructor, W200 Using Computers in Education (Asynchronous), Fall 2022, Indiana University
- Instructor, W200 Using Computers in Education (In-person), Spring 2022, Indiana University
- Instructor, W200 Using Computers in Education (Asynchronous), Fall 2021, Indiana University
- Instructor, W210 Introduction to Computer Science and Technology (Asynchronous), Fall 2021, Indiana University

- Instructor, W210 Introduction to Computer Science and Technology (In-person), Fall 2021, Indiana University
- Instructor, W200 Using Computers in Education (Synchronous), Spring 2021, Indiana University

(K-12 Education)

- Head Teacher, 2014-2020.
Leading the Department of Science, Technology, and Information, Mentoring and supervising novice teachers, Teaching from grade 1 to grade 6
- Special educator for gifted and talented students, 2012-2017.
Teaching advanced mathematics and science for grade 6 gifted students for the after-class program in the Seongnam district
- Elementary School Teacher, 2008-2014.
Teaching all subjects from grade 1 to grade 6

Grant, Fellowship, and Award

(Research Grant)

- Clarence Fogelstrom Dissertation Grant, Indiana University, 2023-2024 (\$3,700)
- Mendel Sherman Dissertation Grant, Indiana University, 2023-2024 (\$3,200)
- Kemp Research Grant, Indiana University, 2023-2024 (\$1,700)
- Larson Travel Grant, Indiana University, 2023-2024 (\$650)
- Larson Travel Grant, Indiana University, 2022-2023 (\$500)
- Center for Research on Learning and Teaching (CRLT) Travel Grant, Indiana University 2023 (\$400)
- Center for Research on Learning and Teaching (CRLT) Travel Grant, Indiana University 2022 (\$300)

- Research Schools for Technology, Korean Ministry of Education, 2018 (\$50,000): This grant was not directly awarded to me but to my school. My responsibilities included writing the grant proposal, organizing all implementations as the program leader, and writing an annual report.

(Fellowship)

- Webb Fellowship, Indiana University, 2023-2024 (\$1,500)
- Webb Fellowship, Indiana University, 2022-2023 (\$2,000)
- Academic Excellence Scholarship, Korea University, 2015 (\$2,000)
- Best Leadership as a Student President, Korea University, 2014 (\$1,500)
- Academic Excellence Scholarship, Busan National University of Education, 2006 (One semester tuition waived)
- Academic Excellence Scholarship, Busan National University of Education, 2003 (One semester tuition waived)
- Outstanding Admission Scholarship, Busan National University of Education, 2003 (One semester tuition waived)

(Award and Honors)

- Women's Poster Competition in the Technology and Computing division ( 1st Prize), CEWIT, Indiana University, 2022 (\$200)
- Excellent Teacher in STEAM Education, Ministry of Education & Korean Science Foundation, 2018
- Best Thesis Award, Korea University, 2016
- Honors for Dedicated Teacher, Seongnam Department of Education, 2016
- Honors for Dedicated Teacher, Seongnam Department of Education, 2015
- Best Lesson Award, Seongnam Department of Education, 2014
- Award for Mentor Teacher, Gyeonggi Province Department of Education, 2013

- Excellence in Teaching, Seongnam Department of Education, 2013
- Best Honors of Teachers, Gyeonggi Institute for Language Education, 2009
- Honors for Dedicated Teacher, Osan Department of Education, 2009

Services

2023	AECT Conference Student Volunteer
2023	AERA Conference Proposal Reviewer
2023	Associate Instructor Orientation Planning Team, Indiana University
2023	AECT Conference Proposal Reviewer
2023	Student Panel for IST Department Program Review
2023	ISLS Conference Proposal Reviewer
2023	IST Conference Proposal Reviewer
2023	ACM Student Paper Competition Reviewer
2021	Diversity, Equity, and Inclusion Task Force, Indiana University
2022	AECT Conference Proposal Reviewer
2022	AECT Conference Zoom Facilitator
2022	IST Conference Proposal Reviewer
2021	STEM to Them Volunteer, MCCSC, Fairview Elementary School, Grandview Elementary School, Summit Elementary School
2017	Saturday Korean School Volunteer Teacher, Singapore Korean International School, Singapore
2014	Student President in the Department of Educational Methodology, Korea University, Korea

Certificate and Qualifications

2019	Teaching English to Speakers of Other Languages (TESOL) Certificate, Seoul National University of Education & University of Queensland
2013	Head Teacher Certificate, Ministry of Education, Korea
2009	Counselor for Students, Korea Mind Educational Institute, Korea
2008	Teaching Certificate, Ministry of Education, Korea
2007	Industrial Engineer Information Procession, Ministry of Science and Technology, Korea

Skills

- Technical Skills: Python, R, Java, CSS, HTML, SPSS, STATA, Jamovi
- Language: English, Korean

Media Coverage

- Korean Education Newspaper

Membership in Professional Organizations

- Association for Computing Machinery (ACM), America
- American Educational Research Association (AERA), America
- Association for Educational Communications and Technology (AECT), America

- Association for Educational Technology, Korea
- Association of Korean Teachers for AI in Education, Korea
- Association of Teachers of Mathematics, Korea
- Korean Teachers of Gifted and Talented Education, Korea

References

Dr. Thomas Brush

Professor, Instructional Systems Technology, Indiana University Bloomington

Barbara B. Jacobs Chair in Education and Technology

Email: tbrush@iu.edu

Phone: (812) 856-8458

Dr. Cindy Hmelo-Silver

Distinguished Professor, Learning Sciences, Indiana University Bloomington

Director, Center for Research on Learning and Technology

Email: chmelosi@indiana.edu

Phone: (812) 856-8335

Dr. Curt Bonk

Professor, Instructional Systems Technology, Indiana University Bloomington

Email: cjbonk@indiana.edu

Phone: (812) 856-8353