MINKYUNG LEE

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EDUCATION

Penn State University State College, PA
Ph.D., Learning Design and Technologies May 2024 (Expected)
Department of Learning Performance and Systems
Dissertation: *Exploring the impact of role assignment in collaborative knowledge construction in asynchronous online discussions*
Advisor: Roy Clariana, Priya Sharma

Lesley University Cambridge, MA
M.Ed., Language and Literacy (Individually Designed) Feb 2014
Department of Education
Thesis: *Consideration in the improvement of Korean students' English proficiency and their perceptions to public English education*
Advisor: William Stokes

Hanyang University Seoul, KOREA
B.A., French Language and Culture Aug 2009
Minor: English Language and Culture
Department of Liberal Arts

PROFESSIONAL APPOINTMENTS

Penn State University State College, PA
Graduate Research Assistant, Leonhard Center for Engineering Education, College of Engineering June 2022 - Present

- Collected and analyzed qualitative data through interviews and focus groups for NSF funded REU (Research Experiences for Undergraduates) and SLA (Sustainable Lab Ambassador) projects; wrote the reports on findings.
- Analyzed mixed-methods data from a survey on Penn State's Entrepreneurship and Innovation (ENTI) Minor to assess the impact of COVID-19 on ENTI students; currently working on a journal manuscript based on the findings.
- Processed and analyzed quantitative data from the PEER (Program for the Evaluation of Educational Readiness) survey; resulting in submitted a conference paper.

Penn State University State College, PA
Graduate Research Fellow, Learning Design, World Campus August 2018 – May 2022

- Collaboratively designed and conducted research related to online learning, particularly for the asynchronous discussion.
- Worked closely with faculty members and other researchers to evaluate and optimize online course content.
- Presented research findings in team meetings, contributing to the department's ongoing efforts to innovate online learning methodologies.

- Participated in training sessions, workshops, and seminars to further develop expertise in digital education and instructional design.

Seoul National University Seoul, KOREA
Researcher, Global Education Center for Engineering, College of Engineering. 2017 - 2018

- Managed IP-based video conferencing for "flipped classroom" models and designed engineering MOOC classrooms.
- Directed a monthly engineering education program for middle school students as part of the university's community service initiative, funded by the Ministry of Education; authored the program's final report.

Hanyang University Seoul, KOREA
Researcher, Center for Teaching and Learning, College of Education 2016-2017

- Organized and led monthly workshops focused on 4C Industrialization hosting expert speakers in the field and received an average satisfaction rating of 4.6/5.0.
- Contributed to the development of a Futurelearn course that was adapted into a K-MOOC course.
- Conducted benchmarking research on U.S. flipped learning courses and co-authored the *Hanyang Flipped Learning Guidebook.*
- Evaluated student collaborative projects with an emphasis on Problem- Based Learning methodologies.

FELLOWSHIPS & GRANTS

Penn State World Campus Graduate Research Fellowship Fall 2018 - Spring 2022
Penn State World Campus Learning Design, Summer Research Fellowship 2019 - 2021
Penn State UPAC (University Park Allocation Committee),
Graduate Student Travel Grant 2021, 2023

HONORS & AWARDS

Penn State College of Education Graduate Student Travel Award 2019, 2020, 2021, 2023
Summer Tuition Assistance Funding, Penn State University 2019, 2020, 2022, 2023

PUBLICATIONS

Lee, M.K., Clariana, R. (under revision). Implementing Sociograms in Online Learning: Examining their influence on Community of Inquiry Elements, Internet and Higher Education.

Lee, M.K., Sharma, P. (under review). Applying a community detection algorithm to examine group formation in online discussions: Exploring Network Characteristics and Dynamics, Internet and Higher Education.

Xia, Y., Cutler, S., Osunbunmi, I., Zappe, S. E., Gomez, E., Velegol, S., & **Lee, M.K.** (under

review). The impact of applied improvisation on undergraduate engineering students' professional development. *Advances in Engineering Education*.

Lee, M.K. & Clariana, R. (2022). The influence of external concept structures on an individual's knowledge structures. Educational Technology, Research & Development (ETR&D)

Lee, M.K., Garbrick, A., Clariana, R. (2021). Knowledge convergence in collaborative concept mapping, Association for Educational Communications & Technology (AECT), Conference proceeding.

Jeong, J. & **Lee, M.K**. (2017). Hanyang MOOC Flipped Learning Guidebook, Hanyang University, Seoul.

PRESENTATIONS

Lee, M.K., Priya Sharma (submitted). Data-Driven Dynamics: Insights into Network Interactions and Outcomes in Student Discussions, International Conference on Learning Analytics & Knowledge (LAK), Kyoto 2024

Lee, M.K., Roy B. Clariana (submitted). Implementing Sociograms in Online Learning: Examining their Influences on Community of Inquiry Elements, AERA, Philadelphia 2024.

Sharma, P., **Lee, M.K**. (submitted). Exploring cognitive and social interactions of highly active 'Rich Clubs' and less active students in online discussions, AERA, Philadelphia 2024

Lee, M.K., Sharma, P. (2023, April). Applying community detection algorithms to examine group formation in online discussions, accepted as a presentation, AERA, Chicago 2023

Clariana, R., **Lee, M.K**. (2022. October). An OER Tool for Writing-to-Learn in Undergraduate Architectural Engineering, accepted as a presentation, College of Education Research Conference, State College

Lee, M.K., Sharma, P. (2022, October). Applying the Louvain algorithm to examine emergent groups in asynchronous online discussion, accepted as a presentation**,** College of Education Research Conference, State College

Lee, M.K., Garbrick, A., Clariana, R. (2021, November). Knowledge convergence in collaborative concept mapping, accepted as a presentation, Association for Educational Communications & Technology (AECT), Chicago.

Lee, M.K., Garbrick, A., Clariana, R. (2021, November). Lexical Network Analysis on synchronous Discussion, accepted as a poster, Association for Educational Communications & Technology (AECT), Chicago.

Lee, M.K., Clariana, R. (2021, November). Students' Perceptions in Online Courses with the Community of Inquiry Framework, accepted as a presentation, Association for Educational Communications & Technology (AECT), Chicago.

Lee, M.K., (2020, November). Social network analysis on online collaborative knowledge construction, accepted as a poster, Association for Educational Communications & Technology (AECT), Virtual.

Lee, M.K. Clariana, R. (2019, November). Knowledge structure measurement of cross-classification table as a visual external representation, accepted as a poster, Association for Educational Communications & Technology (AECT), Las Vegas.

Lee, M.K., & Jiyeon Lee. (2016, October). Examining affective variables within the EFL learner's interlanguage system, accepted as a presentation, KEFL (Korean Association of English as Foreign Language), Seoul.

RESEARCH EXPERIENCE IN FUNDED PROJECTS

Evaluation Assistant in NSF-REU Project

- **Project Title:** Integration of Biology and Materials in Chemical Engineering
  Principal Investigators: Stephanie Velegol, Esther Gomez
  Tasks: Conducted interviews for undergraduate participants and graduate mentors and analyzed data to produce a qualitative report to understand their experiences.

Research and Evaluation Assistant for Leonhard Center-funded Educational Innovation

- **Project Title:** A New Sustainable Lab Ambassador Program within the College of Engineering
  Principal Investigators: Rachel Brennan, Kristen Dreyer, Lydia Vandenburgh, David Jones
  Tasks: Conducted interviews for Sustainable Lab Ambassadors and focus groups for the lap PI and analyzed these qualitative data to produce a qualitative report to understand their sustainable lab experiences.

Research Consultant for NSF-Boeing PEER Grant

- **Project Title:** Engineering Online Learning in Advanced Manufacturing and Data Science
  Principal Investigator: Samuel Spiegel
  Tasks: Analyzed large-scale quantitative survey data and currently working on a manuscript.

RESEARCH SKILLS

Programming & Analysis Languages (Network Analysis, Statistical Analysis, Discourse Analysis)	Python, R
Statistical Analysis Tools	SPSS, Mplus
Content/Discourse Analysis Tools	NVivo
Visualization & Network Analysis Tool	Gephi, yEd

TEACHIING & COURSE DESIGN EXPERIENCE

Penn State University State College, PA
Teaching Assistant/ 'Seminar for Engineering Teaching Assistants',
College of Engineering Fall 2023 - Present

- Graded and provided the feedback for the asynchronous discussion.
- Developed asynchronous collaborative discussion generated by Louvain algorithm.

Penn State University State College, PA
Research-based Course Designer/ 'Introduction to Business
Information Systems', World Campus Fall 2021, Spring 2022

- Designed two modules for enhancing asynchronous discussions in the *'Introduction to Business Information Systems'* course, which were formally accepted into the curriculum.

Seoul National University Seoul
Teaching Assistant/ 'Global Engineering Technology Exchange',
College of Engineering Fall 2017, Spring 2018

- Managed IP-based video conferencing for "flipped classroom" models and assisted collaboratively designed engineering MOOC classrooms with Tokyo university.

Hanyang University Seoul
Course Design Assistant, '*Korea in a Global Context',*
Center for Teaching and Learning Fall 2016

- Assisted in refining MOOC (Futurelearn) course materials to align with pedagogical objectives, ensuring both quality and relevance.

Daejin Woman's High School Seoul
English Instructor, Grade 11 Mar 2015- Feb 2016

- Prepared students for college entrance exams by emphasizing critical reading, writing, and comprehension skills.
- Implemented rigorous test-prep strategies, conducted mock tests, and provided personalized feedback to ensure students were well-equipped for the examination challenges.

Garak Middle School Seoul
English Instructor, Grade 7-8 Mar 2009- Feb 2011

- Taught grammar, vocabulary expansion, and conversational fluency.
- Utilized multimedia resources and real-world contexts to make lessons relatable and to foster a genuine interest in the English language.

CERTIFICATES

University of California San Diego 2009
Teaching English to Speakers of Other Languages Program

ACADEMIC SERVICE

Peer Review for AECT	2019-2021
Peer Review for ASEE	2022
Peer Review for AERA	2023

OUTREACH

Korean Language and Culture Teacher (Grade 1-6), Korean School of New England	Newton, MA 2013-2015
ELL/ Bilingual Parent-Teacher conference assistant/interpreter, Department of Children and Families Malden, MA	Malden, MA 2014-2015

PROFESSIONAL AFFILIATIONS

American Educational Research Association (AERA)	2018, 2022, 2023
American Society for Engineering Education (ASEE)	2022, 2023
Association For Educational Communications & Technology (AECT)	2019 - 2022
The Korean Society of Educational Technology (KSET)	2017
The Korea Association of Foreign Languages Education (KAFLE)	2016