

Curriculum Vitae

Educational Technology and Foundations
College of Education
Education Annex
University of West Georgia
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Carrollton, GA 30118
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Sungwoong Lee

Education

Doctor of Philosophy, Instructional Systems and Learning Technologies (ISLT), Florida State University (FSU) May. 2016

Dissertation: The effects of representation format in problem representation on qualitative understanding and quantitative in a learning game context

Committee: Fengfeng Ke (Chair), Valerie J. Shute, Vanessa P. Dennen, and Gordon Erlebacher (Department of Scientific Computing)

Certificate: *Measurement and Statistics*

Aug. 2013

Master of Arts, Educational Methodology, Korea University, Seoul Mar. 2009

Thesis: The research on relations among physical environment, psychosocial environment, and student achievement

Bachelor of Arts, Education, Korea University, Seoul Mar. 2006

Minor: Sociology

Certificate: *Certified secondary school teacher in Social Studies*

Professional Experience

Assistant Professor, Educational Technology and Foundations, College of Education, University of West Georgia 2019 - current

Assistant Professor, Instructional Design and Technology, The Teachers College, Emporia State University 2016 - 2019

Research Assistant, Educational Psychology and Learning Systems, 2009-2016
Florida State University

Teaching Assistant, Educational Psychology and Learning Systems,
Florida State University

Research Interests

Inclusive VR/AR/MR-based Learning

Learning Supports Design in Game-based Learning

Coding and Computational Thinking for Preservice Teachers and Underrepresented Populations (i.e., young female students and students with autism spectrum disorder)

Publications

1. **Lee, S.**, & Ke, F. (2019). The Format of Problem Representation for In-Game Learning Supports. *Journal of Computer Assisted Learning*, 35(1), 1-17.
2. Cho, K., **Lee, S.**, Joo, M.-H., & Becker, B. (2018). The Effects of Using Mobile Devices on Student Achievement in Language Learning: A Meta-Analysis. *Education Sciences*, 8(3), 105.
3. Lim, T., **Lee, S.**, & Ke, F. (2017). Integrating music into math in a virtual reality game: Learning fractions. *International Journal of Game-Based Learning*, 7(1).
4. Xu, X., Ke, F., & **Lee, S.** (2016). Evaluating teaching competency in a 3D e-learning environment using a small-scale bayesian network. *The Quarterly Review of Distance Education*, 17(3), 61-74.
5. Ke, F., **Lee, S.**, & Xu, X. (2016). Teaching Training in a Mixed-Reality-Integrated Learning Environment. *Computers in Human Behavior*, 62, 212-220.
6. Ke, F., & **Lee, S.** (2016). Virtual reality based collaborative design by children with high-functioning autism: Design-based flexibility, identity, and norm construction. *Interactive Learning Environments*, 1-23. doi: 10.1080/10494820.2015.1040421

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7. Dennen, V., Hao, S., Lee, S., & Lim, T. (2015) Virtual enhancements to physical spaces: A QR code based orientation game. *The Journal of Emerging Learning Design*, 2(1).
 8. Ke, F., Im, T., Xue, X., Xu, X., Kim, N., & Lee, S. (2015). Experience of adult facilitators in a virtual-reality-based social interaction program for children with autism. *The Journal of Special Education*, 0022466913498773.
 9. Park, I., Kang, M. & Lee, S. (2010). The effectiveness of Content Revision, Reuse and Application of Interactive Metaphor in Cyber Universities. In J. Sanchez & K. Zhang (Eds.), *Proceedings of E-Learn: World Conference on E-Learning in Corporate, Government, Healthcare, and Higher Education 2010* (pp. 2073-2082). Chesapeake, VA: Association for the Advancement of Computing in Education (AACE). Retrieved July 8, 2016 from <https://www.learntechlib.org/p/35858>
 10. Park, I., Koh, E., Lee, Y., Lee, S., Kim, T., Eum, M., & Im, T. (2008). A development of competency-based training program system for R&D personnel. *The Korean Journal for Human Resource Development*, 10, 45-70. (https://m.riss.kr/search/detail/DetailView.do?p_mat_type=1a0202e37d52c72d&control_no=6a713b6bc0899726ffe0bdc3ef48d419)
 11. Park, I., Kang, M., Im, T., & Lee, S. (2008). Relation between learners' participation and learning achievement in e-learning environment of cyber universities. *International Journal of Educational Media and Technology*, 3.

Manuscripts in Revision or Review

1. Lee, S., Ke, F., & Ryu, J. (*submitted*). Engagement and effectiveness of symbolic and iconic learning support for math problem representation: An eye tracking study. *Journal of Mathematical Behavior*

Book Chapters

1. Holland, J., & Lee, S. (2019). Internet of Everything (IoE): Eye Tracking Data Analysis (P. Cardoso, J. Monteiro, J. Semião, & J. Rodrigues, Eds.). In *Harnessing the Internet of Everything (IoE) for Accelerated Innovation Opportunities*. IGI Global.

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2. Holland, J., Lee, S., Daouk, M., & Agbaji D. (2019). Augmented Reality: For Teaching and Training.

Manuscripts in Progress

1. Lee, S., Ke, F., Moon, J., Reed, M., & Xu, X. Girls coding
2. Lee, S., & Holland, J. Pre-service teacher's learning material design: An eye-tracking study.
3. Lee, S., Almond, R., & Cho, S. Modeling the mastery of mental problem representation with respect to qualitative and quantitative understanding in a math learning game.
4. Moon, J., Lee, S., & Xu, X. Effect of preservice teachers' technology acceptance on group contribution and TPACK understanding in training for makerspace activity design.
5. Cho, K., & Lee, S. Important factors to enhance pre-service teachers' perceived technology and TPACK proficiency in teaching.

Presentations

1. Holland, J., & Lee, S. (October, 2018). *Evaluating Emerging Technologies with Cutting Edge Eye Tracking & Sensor Based Biometrics*. Paper presented at the annual meeting of Association for Educational Communication and Technology. Kansas City, KS.
2. Cho, K., Lee, S., Joo, M., & Becker, B. (October, 2018). *Better Way to Learn English? Mobile Learning!* Paper presented at the annual meeting of Association for Educational Communication and Technology. Kansas City, KS.
3. Cho, K., Lee, S., & Jozenia, C. (October, 2018). *Research on Important Factors to Improve TPACK for Pre-Service Teachers*. Paper presented at the annual meeting of Association for Educational Communication and Technology. Kansas City, KS.
4. Lee, S., Ryu, J., & Ke, F. (April, 2018). *Effects of problem representation format on visual attention and mathematics word problem solving accuracy: Does iconic make a difference?* Paper presented at the annual meeting of American Educational Research Association. New York, NY.

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5. **Lee, S.**, Cho, K., & Reed, M. (March, 2018). *Girl Code: Using arduino in the classroom*. Paper presented at the annual meeting of Mid-America Association for Computer in Education. Manhattan, KS.
 6. **Lee, S.**, Ryu, J., & Ke, F. (November, 2017). *Effects of representation format on eye movements in math problem solving: Does iconic make a difference?* Paper presented at the annual meeting of Association for Educational Communication and Technology. Jacksonville, FL.
 7. **Lee, S.**, & Cho, K. (November, 2017). *Modeling the mastery of conceptual understanding and math problem solving skills in relation to learning support enhancing problem representation and game support enhancing general game skills in a math learning game*. Paper presented at the annual meeting of Association for Educational Communication and Technology. Jacksonville, FL.
 8. Joo, M., **Lee, S.**, & Cho, K. (November, 2017). *The effects of using mobile devices on student achievement in language learning: A Meta-Analysis*. Paper presented at the annual meeting of Association for Educational Communication and Technology. Jacksonville, FL.
 9. Ke, F., Xu, X., **Lee, S.**, Moon, J., Dai, Z., Pan, Y., Shute, V., Clark, K., & Erlebacher, G. (April, 2017). *Math learning through game-based architectural design and building*. Paper presented at the annual meeting of American Educational Research Association. San Antonio, TX.
 10. **Lee, S.** (April, 2017). *The design of math Task and learning support in a math learning game: A design research perspective*. Roundtable conducted at the annual meeting of American Educational Research Association. San Antonio, TX.
 11. Ke, F., Qi, C., & **Lee, S.** (October, 2016). *Mixed reality based social skills training for children with high-functioning autism*. Poster presentation at the 2016 Special Topic Meeting: Technology and Media in Children's Development of Society for Research in Child Development. Irvine, CA.
 12. **Lee, S.**, & Cho, K. (October, 2016). *Effects of video games on math achievement*. Technology showcase conducted at the annual meeting of Association for Educational Communications and Technology. Las Vegas, NV.
 13. Moon, J., Xu, X., & **Lee, S.** (October, 2016). *Embodied pulley physics: The development of hands-on user interaction in virtual reality*. Technology showcase at the annual meeting of Association for Educational Communications and Technology. Las Vegas, NV.

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14. **Lee, S.,** & Ke, F. (April, 2016). *The effects of representation format in problem representation on qualitative understanding and quantitative proficiency in a learning game context*. Paper presented at the annual meeting of American Educational Research Association. Washington D.C.
 15. Ke, F., Shute, V., Clarke, K., Erlebacher, G., **Lee, S.,** Faizian, P., Smith, D., Moore, G., & Xu, X. (April, 2016). *Interweaving learning game design and game-based learning assessment: A design experiment*. Paper presented at the annual meeting of American Educational Research Association. Washington D.C.
 16. Ke, F., **Lee, S.,** & Xu, X. (April, 2015). *Teaching training in a kinect-integrated, virtual reality learning environment*. Paper presented at the annual meeting of American Educational Research Association. Chicago, IL.
 17. **Lee, S.,** & Cho, K. (April, 2015). *A meta-analysis: Effect of video game in math on student achievement*. Paper presented at the annual meeting of American Educational Research Association. Chicago, IL.
 18. **Lee, S.,** Xu, X., & Ke, F. (November, 2014). *Design research for non-playable characters (NPCs) in immersive virtual-reality based learning environment (VRLE)*. Paper presented at the annual meeting of Association for Educational Communications and Technology. Jacksonville, FL.
 19. Xu, X., **Lee, S.,** & Ke, F. (November, 2014). *Kinect-based training and learning in a virtual-reality setting – Enhanced sense of presence?* Paper presented at the annual meeting of the Association for Educational Communications and Technology. Jacksonville, FL.
 20. Ke, F., **Lee, S.,** Xu, S., (November, 2014). *Immersive learning in a kinect-integrated virtual reality environment*. Paper presented at the annual meeting of Association for Educational Communications and Technology. Jacksonville, FL.
 21. Ke, F., **Lee, S.,** & Xu, X. (March, 2013). *Virtual-reality-based, kinect-integrated teaching simulation environment*. Digitech 2014. Tallahassee, FL.
 22. Dennen, V., Hao, S., **Lee, S.,** & Lim, T. (June, 2013). *Virtual enhancements to physical spaces: A QR code based orientation game*. Paper presented at the Emerging Learning Design 2013 Conference, Montclair, NJ.
 23. **Lee, S.** & Ke, F. (June, 2013). *A design-based research: An initial model of an embodied cognition based video game for children with autistic spectrum disorder*. Poster session at Game+Learning+Society Conference, Madison, WI.

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24. Kim, H., Grandy, G., **Lee, S.**, Lim, T., & Ke, F. (June, 2013). *Pedagogical agents in game-based mathematics learning in virtual worlds: OpenSim project bazaar*. Poster session at Game+Learning+Society, Madison, WI.
 25. Ke, F., Im, T., Xinrong, X., Xu, X., Kim, N., & **Lee, S.** (April, 2013). *Facilitating social interactions in a virtual world for children with autism*. Paper presented at the annual meeting of American Educational Research Association, San Francisco, CA.
 26. **Lee, S.**, & Cho, K. (April, 2013). *The relations between physical environment and psychosocial environment: Literature review*. Poster presentation at Society for Information Technology & Teacher Education International Conference 2013, 685-690.
 27. **Lee, S.**, & Ke, F. (March, 2013). *The effect of scaffolding on achievement and motivation in a virtual problem-based learning environment*. Poster presentation at Society for Information Technology & Teacher Education International Conference 2013,.
 28. **Lee, S.** (March, 2012). *Virtual learning environments using opensimulator*. Technology Showcase conducted at Digitech 2012. Tallahassee, FL.
 29. Park, I., Jeong, S., Shin, H., & **Lee, S.** (November, 2011). *The use of laptops in university classes: A qualitative study*. Paper presented at the annual meeting of Association for Educational Communications and Technology. Jacksonville, FL
 30. **Lee, S.**, Xue, X., & Ke, F. (June, 2011). *The effects of virtual reality environments on children with autism spectrum disorder*. Poster session at Game+Learning+Society Conference, Madison, WI.
 31. Kang, M., Park, I., & **Lee, S.** (October, 2010). *A study on the instructional effects of revision, reuse of and application of interactive media in e-learning content of cyber universities*. Paper presented at the annual meeting of E-Learn, Orlando, FL.
 32. Park, I., Koh, E., Lee, Y., **Lee, S.**, Kim, T., Eum, M., & Im, T. (November, 2008). *A development of competency-based training program system for R&D personnel*. Paper presented at the annual meeting of Association for Educational Communications and Technology. Orlando, FL.
 33. Kim, T., Jang, Y., & **Lee, S.** (2006). *How can we enhance the function of contents in cyber home learning system (CHLS)?* Poster session at the International Conference for Media in Education. Tokyo, Japan

Research Projects

Earthquake Rebuild

2014-Present

Description: The game-based learning environment, called “Earthquake Rebuild,” sets learners up in a virtual world where an earthquake has demolished a city, and they must use geometry and arithmetic to make architectural and resource management decisions as they aim to rebuild the city.

(funded by a grant from the National Science Foundation)

Target Participants: 5th to 8th graders

Role: Learning support design, Administrating usability testing, developing entire game mechanism, Developing evaluation methods

Virtual-Reality-Based Social Skills Training for Children with Asperger’s Syndrome

2014-Present

Description: The project aims to enrich the research area of technology for special education by examining a networked, versatile learning environment in which children with autism can engage in in situ, design- and play-mediated social skills training. *(funded by a grant from the Spencer Foundation)*

Target Participants: K-12

Role: Administrating OpenSimulator Server (Window server 2003 with MySQL database server), Intervention design for prompting social interaction and communication, design and developing objects in virtual environments, Developing Non-Player Characters (NPCs).

Inclusive design of e-learning

2014-2016

Description: The study of Mixed-Reality-Integrated Learning Environment (MILE) aims to design and examine a virtual-world-based, body-sensory-technology-enhanced learning platform to reinforce situated cognitive and metacognitive learning for online learners with diverse

special needs. (*funded by a grant from the Spencer Foundation*)

Target Participants: K-12

Role: Configuring motion capture device (Kinect for Xbox 360 and Xbox One), Administrating OpenSimulator Server (Window server 2003 with MySQL database server), NPC design to simulate common classroom in the virtual world.

A Design-Based Research: An initial model of an embodied Cognition Based Video Game for Children with Autism Spectrum Disorder	2013-2015
Pedagogical Agents in Game-based Mathematics Learning in Virtual Worlds: OpenSimulator project Bazaar	2013
Facilitating social interaction in a virtual world for children with autism.	2012
Using 3D virtual reality for social communication skills development: A Second Life-based learning program for children with Autism Spectrum Disorder	2011
Establishing e-learning content sharing systems in higher education	2008
Evaluation of the Ubiquitous classroom	2008
Sharing and using e-learning content in Higher education	2007
Ubiquitous classroom models	2006
Establishing and managing the Science-Technology Cyber Learning Institution	2006
Identifying potential parent tutors' competencies with Cyber Home Learning System	2005
Parent Participation with Cyber Home Learning System	2005
Enhancing ULSAN Cyber Home Learning System	2005
Establishing a graduate school for policemen	2004

Teaching Experience

Emporia State University

Undergraduate Level

IT 371 Advanced Instructional Technology for Educators (Face-to-Face)

Graduate Level

SD 720 Assistive Technology (Online)

IT 800 Instructional Design (Face-to-Face & Online)

IT 795 Research Method in Instructional Design and Technology (Face-to-Face & Online)

IT 727 Integrating Educational Technology into Teaching (Online)

Florida State University

Graduate Level

EME 5601 Introduction to Instructional Systems

EME 5603 Introduction to Systematic Instructional Design

EME 5614 Design of Learning Games

EME 6507 Development of Multimedia Instruction

EME 6635 Learning and Web Analytics

Service & Experience

National Level

Board Member, Design and Development Division (D&D) at Association for Educational Communications & Technology (AECT) 2018 - 2021

College Level

Member, Diversity and Inclusion Committee 2018-present

Member , Faculty Recognition Committee	2017-2018
Member , Advanced Programs Committee (CAEP Accreditation)	2016-present
Member , Ervay Research Award Committee	2016 - 2017

Department & Program Level

Member , Diversity and Inclusion Committee	2018-present
Chair , Faculty Recognition Committee	2017-2018
Member , Faculty Recognition Committee	2016-present
Member , Concentration Areas in IDT and TESOL Committee	2016-present
Advisor , Instructional Technology Student Association	2016-present
Advisor , Korean Student Association	2016-present
President , Instructional Systems Student Association at FSU	2012
Multimedia Lab. Coordinator , at ISLT at FSU	2012-2016

Editorial Board & Journal Review

Editor , International Journal for Educational Media and Technology	2018-present
Reviewer , Educational Technology Research and Development	2018-present
Reviewer , Journal of Inclusive Education	2017-present
Reviewer , Computer and Education	2016-present
Reviewer , International Journal of Applied Sports Sciences	2016-present
Reviewer , International Journal of Virtual and Personal Learning Environments	2017-present 2016-present
Reviewer , Journal of Special Education	2016-present
Reviewer , The Internet and Higher Education	2016-present

Instructional Design & Other Teaching Experience

Korean Teacher , Tallahassee Korean School	2011-2014
Instructional Designer , Tallahassee Community College	2011-2012 2007

Instructional Designer, Course Evaluation and Return on Investment (ROI) in elearning for Instructional Designer 2007

Instructional Designer, Planning and Collecting Content in elearning for Instructional Designer Spring, 2005

Intern Teacher, Seok-kwan Middle School in Seoul, Korea

Professional Development

Grant Writing Workshop at Kansas State University Nov. 2 & 3, 2017

NSF-Sponsored Early Career Symposium at the AECT International Convention in Las Vegas, NV Jul. 30, 2017

2nd Annual Games and Learning Early Career Workshop at Game for Change Festival in New York, NY Oct. 17, 2016

Community Service

Leader, Korean Tennis Team at FSU 2010-2013

APEC Learning Community Builders (ALCoB) in Thailand. 2004-2005

Military Service. 2001-2003

Awards

Outstanding Doctoral Student Award Nomination, Instructional Systems and Learning Technologies Apr, 2015

Ruby Diamond Future Professor Award, Instructional Systems and Learning Technologies Apr, 2013

Gagne Briggs Outstanding Student Service Award, Instructional Systems and Learning Technologies Apr, 2012

Grant Activity

The Florida State University College of Education Council on Research in Education travel grant. Game+Learning+Society Conference (Madison, Wisconsin; 2013 and 2011). **Grant Funded (\$700 total)**

The Florida State University Instructional Systems and Learning Technology travel grant. Association for Educational Communications and Technology Conference: Jacksonville, Florida. **Grant Funded (\$150)** 2014.

The Florida State University Congress of Graduate Students travel grant. Association for Educational Communications and Technology Conference (Jacksonville, Florida; 2013); E-Learn Conference (Orlando, Florida; 2010); Game+Learning+Society Conference (Madison, Wisconsin; 2013 and 2011); Society for Information Technology and Teacher Education Conference (New Orleans, Louisiana; 2013). **Grant Funded (\$ 1,000 total)**

Scholarships

Administrative Assistant Scholarship	Spring, 2008
Research Assistant Scholarship	Fall, 2007
Research Assistant Scholarship	Spring, 2007
Administrative Assistant Scholarship	Fall, 2006
The Second Stage of BK21 (Brain Korea 21 th) Scholarship	Fall, 2006
Work Scholarship	Fall, 2005
Research Scholarship	Fall, 2005
Study Scholarship	Spring, 2004

Technology Skills

Game-based Learning Tools

Minecraft: Java Edition and Minecraft: Education Edition

Biometric Research Tools

Gazepoint Eyetracker and iMotions

Virtual Reality Tools

High Fidelity, OpenSimulator, Oculus Rift, and Samsung Odyssey

3D Design Tools

Unity3D, Blender, TinkerCad, and SketchUp Pro

3D Printing Tools

Afinia and Makerbot

Motion Capture Tools

Xbox Kinect and Leap Motion

Website & Server Maintenance

Window Server 2016, Dreamweaver, MySQL, and PHP

Animation Authoring Tools

CrazyTalk 8, CrazyTalk Animator 2, and iClone

Elearning Authoring Tools

Articulate Storyline 2 and Articulate Studio '13

Statistical Software

R, Python, MPlus, SPSS, and SAS

Professional Memberships

Association for Educational Communication & Technology (AECT)

American Education Research Association (AERA)

International Society for Technology in Education (ISTE)

Game for Change

Society for Information Technology & Teacher Education International (SITE)