

Stanford



Victor R. Lee

Associate Professor of Education
Graduate School of Education

 Curriculum Vitae available Online

CONTACT INFORMATION

- **Admin. Support**

John Baker

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Bio

BIO

Victor R. Lee is an Associate Professor in the Graduate School of Education at Stanford University. Through his research, he tries to understand the new opportunities for people of all ages to learn STEM content and practices with the support of emerging digital technologies. Current research examines computational thinking in elementary school, maker education in out of school settings, and teaching and learning about data in K-12 settings. Longer standing lines of work involve studying self-tracking and learning from quantified self practices and research on conceptual change in science education. Lee completed his undergraduate studies at UC San Diego with emphasis in cognitive science, human computer interaction, and mathematics. He earned his doctorate in Learning Sciences at Northwestern University where he was supported for several years through a fellowship with the NSF-funded Center for Curriculum Materials in Science. Since leaving the midwest and beginning his professional academic career, he has received the National Science Foundation CAREER award, the Jan Hawkins Award, and a post-doctoral fellowship from the National Academy of Education and the Spencer Foundation. His book, *Learning Technologies and the Body* (published by Routledge), is the first compendium of current research of embodied technologies for learning. With Abigail Phillips, he published a new book, *Reconceptualizing Libraries: Perspectives from the Information and Learning Sciences* (2018). Victor sits on the editorial board of several leading journals, including *Journal of the Learning Sciences*, *Cognition & Instruction*, and *Educational Technology Research & Development*. He is president-elect of the International Society of the Learning Sciences.

ACADEMIC APPOINTMENTS

- Associate Professor, Graduate School of Education

ADMINISTRATIVE APPOINTMENTS

- Assistant Professor, Department of Instructional Technology & Learning Sciences, Utah State University, Logan, (2009-2015)
- Associate Professor, Department of Instructional Technology & Learning Sciences,, Utah State University, Logan, (2015-2019)

HONORS AND AWARDS

- Outstanding Research Award, Council for Technology & Engineering Teacher Education (2018)
- Postdoctoral Fellowship, National Academy of Education/Spencer Foundation (2014)
- Jan Hawkins Award, American Educational Research Association (2013)
- CAREER Award, National Science Foundation (2011)

BOARDS, ADVISORY COMMITTEES, PROFESSIONAL ORGANIZATIONS

- Committee Member, National Academies of Science, Engineering and Medicine - Committee on Authentic STEM Experiences (2019 - present)
- President-Elect, International Society of the Learning Sciences (2019 - present)
- Board Member, International Society of the Learning Sciences (2015 - present)

PROFESSIONAL EDUCATION

- PhD, Northwestern University , Learning Sciences (2008)
- BS, UC San Diego , Cognitive Science with Specialization in Human-Computer Interaction (2001)
- BA, UC San Diego , Math/Applied Science (2001)

LINKS

- Personal Website: <http://www.victor-r-lee.com>

Research & Scholarship

RESEARCH INTERESTS

- Brain and Learning Sciences
- Collaborative Learning
- Curriculum and Instruction
- Early Childhood
- Elementary Education
- Lifelong Learning
- Math Education
- Motivation
- Science Education
- Teachers and Teaching
- Technology and Education

CURRENT RESEARCH AND SCHOLARLY INTERESTS

My research has three major strands. One is looking at student learning through the use of data sets that they create themselves and are about their routine activities. This is associated with the "Quantified Self" movement which entails gaining personal insight from collecting and analyzing one's own data. Through support of an NSF CAREER award, I have conducted multiple years of design-based research studies with elementary and middle school classrooms where we have developed learning activities for students to work with their own bodily data obtained from wearable devices. This is extending into research on teaching and learning with data generally and exploring what a K-12 data science education would look like.

A second strand of research involves looking at learning in maker spaces and programs outside of the classroom. The broader maker movement has inspired a range of community activities and informal learning organizations to offer maker learning experiences. In one project, I have been examining student engagement in maker learning activities hosted at an after school program based at a community maker space. In another, I have been designing supports for rural libraries to host and enact maker programs for teens. Additionally, I have sought to examine what knowledge changes through participation in making.

Finally, a third strand of research involves computational thinking at the elementary school levels. Schools are increasingly seeking out and introducing computer science curricula for their students, and elementary schools are no exception. In one project, my team has been designing instruction around computer science board

games as a way of introducing computer science through an "unplugged" approach. Rather than leaving all learning activities in their unplugged format, we then transition students to working with computer-based versions of the same activities to transfer their nascent understandings. In another project, I work with colleagues to study computational thinking of kindergarteners as it is expressed through use of commercial coding toys. Our larger goal is to develop an assessment protocol for measuring computational thinking for this young age group, which is also beginning to experience computer science activities in their classrooms.

Teaching

COURSES

2019-20

- Thinking and Learning with Data: EDUC 431 (Spr)

Publications

PUBLICATIONS

- **An Emerging Technology Report on Computational Toys in Early Childhood** *TECHNOLOGY KNOWLEDGE AND LEARNING*
Hamilton, M., Clarke-Midura, J., Shumway, J. F., Lee, V. R.
2020; 25 (1): 213–24
- **Instructional support for learning with agent-based simulations: A tale of vicarious and guided exploration learning approaches** *COMPUTERS & EDUCATION*
Dubovi, I., Lee, V. R.
2019; 142
- **At Home With Data: Family Engagements With Data Involved in Type 1 Diabetes Management** *JOURNAL OF THE LEARNING SCIENCES*
Lee, V. R., Dubovi, I.
2019
- **The picture of smartphones at school is not a dire one and the picture of student competence is a bright one** *LEARNING CULTURE AND SOCIAL INTERACTION*
Lee, V. R.
2019; 21: 293–95
- **A wearables-based approach to detect and identify momentary engagement in afterschool Makerspace programs** *Contemporary Educational Psychology*
Lee, V. R., Fischback, L., Cain, R.
2019
- **The building blocks of coding: a comparison of early childhood coding toys** *INFORMATION AND LEARNING SCIENCES*
Clarke-Midura, J., Lee, V. R., Shumway, J. F., Hamilton, M. M.
2019; 120 (7-8): 505–18
- **On researching activity tracking to support learning: a retrospective** *INFORMATION AND LEARNING SCIENCES*
Lee, V. R.
2019; 120 (1-2): 133–54
- **Youth Concerns and Responses to Self-Tracking Tools and Personal Informatics Systems**
Potapov, K., Lee, V. R., Vasalou, A., Marshall, P., Assoc Comp Machinery
ASSOC COMPUTING MACHINERY.2019
- **Paper Circuits: A Tangible, Low Threshold, Low Cost Entry to Computational Thinking** *TECHTRENDS*
Lee, V. R., Recker, M.
2018; 62 (2): 197–203
- **Reconceptualizing Libraries: Perspectives from the Information and Learning Sciences.**
edited by Lee, V. R., Phillips, A. L.
Routledge.2018

- **A rubric for describing competences in the areas of circuitry, computation, and crafting after a course using e-textiles** *INTERNATIONAL JOURNAL OF INFORMATION AND LEARNING TECHNOLOGY*
Lee, V. R., Fields, D. A.
2017; 34 (5): 372–84
- **A Comparison of Discovered Regularities in Blood Glucose Readings across Two Data Collection Approaches Used with a Type 1 Diabetic Youth** *METHODS OF INFORMATION IN MEDICINE*
Lee, V., Thurston, T., Thurston, C.
2017; 56: E84–E91
- **Appropriating Quantified Self Technologies to Support Elementary Statistical Teaching and Learning** *IEEE TRANSACTIONS ON LEARNING TECHNOLOGIES*
Lee, V. R., Drake, J. R., Thayne, J. L.
2016; 9 (4): 354–65
- **Let's Get Physical: K-12 Students Using Wearable Devices to Obtain and Learn About Data from Physical Activities** *TECHTRENDS*
Lee, V. R., Drake, J., Williamson, K.
2015; 59 (4): 46–53
- **Combining High-Speed Cameras and Stop-Motion Animation Software to Support Students' Modeling of Human Body Movement** *JOURNAL OF SCIENCE EDUCATION AND TECHNOLOGY*
Lee, V. R.
2015; 24 (2-3): 178–91
- **Learning Technologies and the Body: Integration and Implementation in Formal and Informal Learning Environments**
edited by Lee, V. R.
Routledge.2015
- **Understanding the Opportunities and Challenges of Introducing Computational Crafts to Alternative High School Students** *EDUCATIONAL MEDIA AND TECHNOLOGY YEARBOOK, VOL 39*
DuMont, M., Lee, V. R., Orey, M., Branch, R. M.
2015; 39: 83–99
- **The Role of School District Science Coordinators in the District-Wide Appropriation of an Online Resource Discovery and Sharing Tool for Teachers** *JOURNAL OF SCIENCE EDUCATION AND TECHNOLOGY*
Lee, V. R., Leary, H. M., Sellers, L., Recker, M.
2014; 23 (3): 309–23
- **Students' Digital Photography Behaviors during a Multiday Environmental Science Field Trip and Their Recollections of Photographed Science Content** *EDUCATION RESEARCH INTERNATIONAL*
Lee, V. R.
2014
- **Knowing and Learning with Technology (and on Wheels!): An Introduction to the Special Issue** *TECHNOLOGY KNOWLEDGE AND LEARNING*
Lee, V. R.
2013; 18 (1-2): 1–8
- **Digital Physical Activity Data Collection and Use by Endurance Runners and Distance Cyclists** *TECHNOLOGY KNOWLEDGE AND LEARNING*
Lee, V. R., Drake, J.
2013; 18 (1-2): 39–63
- **Collaborative Strategic Board Games as a Site for Distributed Computational Thinking** *DEVELOPMENTS IN CURRENT GAME-BASED LEARNING DESIGN AND DEPLOYMENT*
Berland, M., Lee, V. R., Felicia, P.
2013: 285–301
- **Framing in cognitive clinical interviews about intuitive science knowledge: Dynamic student understandings of the discourse interaction** *SCIENCE EDUCATION*
Russ, R. S., Lee, V. R., Sherin, B. L.
2012; 96 (4): 573–99

- **Some assembly required: How scientific explanations are constructed during clinical interviews** *JOURNAL OF RESEARCH IN SCIENCE TEACHING*
Sherin, B. L., Krakowski, M., Lee, V. R.
2012; 49 (2): 166–98
- **Material Pets, Virtual Spaces, Isolated Designers: How Collaboration May Be Unintentionally Constrained in the Design of Tangible Computational Crafts**
DuMont, M., Lee, V. R., ACM
ASSOC COMPUTING MACHINERY.2012: 244–47
- **In Pursuit of Consensus: Disagreement and legitimization during small-group argumentation** *INTERNATIONAL JOURNAL OF SCIENCE EDUCATION*
Berland, L. K., Lee, V. R.
2012; 34 (12): 1857–82
- **RETWEETING HISTORY Exploring the Intersection of Microblogging and Problem-based Learning for Historical Reenactments** *DESIGNING PROBLEM-DRIVEN INSTRUCTION WITH ONLINE SOCIAL MEDIA*
Lee, V. R., Shelton, B. E., Walker, A., Caswell, T., Jensen, M., Seo, K. K., Pellegrino, D. A., Engelhard, C.
2012: 23–40
- **Integrating physical activity data technologies into elementary school classrooms** *ETR&D-EDUCATIONAL TECHNOLOGY RESEARCH AND DEVELOPMENT*
Lee, V. R., Thomas, J. M.
2011; 59 (6): 865–84
- **Collaborative Strategic Board Games as a Site for Distributed Computational Thinking** *INTERNATIONAL JOURNAL OF GAME-BASED LEARNING*
Berland, M., Lee, V. R.
2011; 1 (2): 65–81
- **How Different Variants of Orbit Diagrams Influence Student Explanations of the Seasons** *SCIENCE EDUCATION*
Lee, V. R.
2010; 94 (6): 985–1007
- **What Students Include in Hand-Drawn Diagrams to Explain Seasonal Temperature Variation**
Lee, V. R., Goel, A. K., Jamnik, M., Narayanan, N. H.
SPRINGER-VERLAG BERLIN.2010: 313–15
- **Adaptations and Continuities in the Use and Design of Visual Representations in US Middle School Science Textbooks** *INTERNATIONAL JOURNAL OF SCIENCE EDUCATION*
Lee, V. R.
2010; 32 (8): 1099–1126