About the Contributors

**Robert Zheng** is an associate professor of instructional design and educational technology in the Department of Educational Psychology at the University of Utah. His research area includes multimedia and cognition, instructional design and development, web-based learning, educational gamification. He has published five edited books, numerous refereed journal papers and book chapters.

**Michael K. Gardner** is professor of learning sciences and Associate Chair in the Department of Educational Psychology at the University of Utah. His research area includes cognitive processes, memory, individual differences, cognition in aging, and measurement. He has published one edited book and one co-authored book, has numerous journal articles and book chapters, and has received over $1 million in external support for his research. He is former Acting Dean of the College of Education at the University of Utah.

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**Mete Akcaoglu**, Ph.D., is an assistant professor of Instructional Technology in the College of Education at Georgia Southern University. His scholarly interests include the design and evaluation of technology-rich and innovative learning environments for K-12 children. He can be found at http://meteakcaoglu.com.

**Roger Altizer Jr.** is the co-founder of the University of Utah’s Entertainment Arts and Engineering program, the top ranked game design program in the nation. Roger also is the Director of Digital Medicine for the Center for Medical Innovation, the Director of The GApp lab (Therapeutic Games and Apps), and former director of the Center for Interdisciplinary Art and Technology at the University of Utah. Roger earned his Ph.D. in Communication at the University of Utah and specializes in game design education and participatory design. A former games journalist, he is an internationally-recognized speaker who has presented at industry conferences such as the Games Developer Conference and Penny Arcade Expo, and academic conferences including the Digital Games Research Association and Foundations of Digital Games.

**Rebecca P. Ang** is an Associate Professor at the Psychological Studies Academic Group, National Institute of Education, Nanyang Technological University, Singapore. She obtained her PhD in School Psychology (specializing in clinical child psychology) from Texas A&M University. She is a Nationally Certified School Psychologist in the USA, and a Registered Psychologist in Singapore. Her research
and professional interests include developmental child psychopathology, and in particular antisocial and aggressive behavior, and related prevention and intervention work. She is also interested in parent-child relationships, teacher-student relationships, and the impact of the quality of such relationships on child, familial and school adjustment/functioning.

Jillian Boon is a Senior Educational Psychologist in a community mental health team, REACH (Response, Early interventions and Assessment in Community mental Health), under the Department of Child and Adolescent Psychiatry in the Institute of Mental Health. At REACH, she works closely with school personnel in triaging cases, providing intervention and consultation within the community. She has graduated with a Bachelors Degree in Psychology from Monash University and has a Masters Degree in Applied Psychology (specializing in Educational Psychology) from Nanyang Technological University of Singapore. Jillian’s research interest lies in improving psychological treatment through the use of technology and gamification.

Kirsten Butcher is an Associate Professor in Educational Psychology and the Director of the Instructional Design and Educational Technology program at the University of Utah. Kirsten has a Ph.D. in Cognitive Science and Psychology from the University of Colorado at Boulder. Her work focuses on the impact of multimedia materials and visual interactions on high-level cognitive processes and transferrable learning outcomes. She studies educational technology from both a design and assessment perspective, grounding each approach in cognitive theories of learning and comprehension. Kirsten’s work appears in high-impact scholarly journals and books, including the Journal of Educational Psychology and Human Computer Interaction. She is a frequent presenter at national conferences, including the Annual Meeting of the Cognitive Science Society and the American Educational Research Association.

HeeSun Choi (MS) is a PhD student in the Human Factors and Applied Cognition program at the Department of Psychology, North Carolina State University. Her primary research interests are in attention-related errors during task performance, driving risks with cognitive aging, and cognitive training methods.

Timothy Compeau is postdoctoral researcher at Brock University in St. Catharines, Ontario. Compeau is a cultural historian of colonial North America and the Atlantic World with a special interest in honour culture and loyalism in the American Revolution. He is presently conducting research on the application of augmented reality technology for public history and museums.

Boaventura DaCosta holds a Ph.D. in instructional technology, a M.A. in instructional technology/media, instructional systems, and a B.S in computer science. His research interests span numerous topics in the areas of assistive technology, information and communication technology, and gaming.

Joshua A. Danish is an Associate Professor of the Learning Sciences at Indiana University. His research explores how we can support early elementary children in learning complex science concepts that are often thought to be out of reach for them. Danish seeks to support early elementary students in these efforts through the design of innovative activities, curricula, and technologies. He is particularly interested in how students represent their emerging science ideas in a range of formats from drawings, to sculptures, to embodied play, as well as how we can design new representations to help students attend to these important concepts.
Oliver Dreon is an associate professor and director of the Center for Academic Excellence at Millersville University of Pennsylvania. Dr. Dreon earned his PhD in Curriculum & Instruction from Penn State University where he focused on science education and instructional systems. At Millersville, Dr. Dreon teaches a wide variety of education and instructional technology courses both in face-to-face and online formats, and also coordinates the university’s Digital Learning Studio. He is the co-author of the book Authentic Instruction with Technology: A Student-Centered Approach and has published in various journals, including the Middle Level Journal, TechTrends, Teachers and Teaching, Science Education, Online Classroom and Teacher Education & Practice. Dr. Dreon also contributes to Faculty Focus, an online newsletter providing pedagogical and technological strategies for higher education. Dr. Dreon has spent over twenty years teaching in various educational environments. His research examines how technology can be used to support student development through physical, online, and hybrid learning spaces. Dr. Dreon also studies the role that technology plays in supporting communities of practice for educators across the educational landscape.

Jing Feng (PhD) is an Assistant Professor in the Human Factors and Applied Cognition Program at the Department of Psychology, North Carolina State University. She studies human attention and cognition, with applications of cognitive principles to human factors. On the theoretical side, she conducts research to investigate attention across an extended visual field, individual differences and age-related changes in attention and spatial skills, and the effects of cognitive training using video games. On the practical side, she applies these theoretical findings to understand aging and driving, driver distraction and the design of information technology.

Daniel Fung is the Chairman, Medical Board, at the Institute of Mental Health, Singapore since Dec 2011. He is an Adjunct Associate Professor at all 3 medical schools in Singapore. Dr Fung volunteers with many international and local NGOs on mental health. He has received several awards including the National Healthcare Group’s Distinguished Achievement Award in 2010, and the Singapore Children’s Society Gold Service Award 2012. Dr Fung has been involved in over 10 national level funded research grants. He has coauthored over 75 peer reviewed research papers, 27 books and more than 10 book chapters.

Xun Ge (University of Oklahoma) is Professor of Instructional Psychology and Technology and Chair of Department of Educational Psychology at Jeannine Rainbolt College of Education, the University of Oklahoma. She holds Ph.D. in Instructional Systems from the Pennsylvania State University. Dr. Ge’s primary research involves scaffolding students’ complex and ill-structured problem solving and self-regulated learning through designing instructional scaffolds, cognitive tools, learning technologies, and open learning environments (including virtual learning community, game-based learning, inquiry-based learning, and problem-based learning). Over the years, her scholarly works have evolved to link cognition with motivation. Dr. Ge is also interested in studying the impact and assessment of game-based learning in supporting complex, ill-structured problem solving. Dr. Ge has extensive research experience in STEM education, and she has collaborated with scholars from diverse disciplines around the world. Dr. Ge’s research has been published in two co-edited books published by Springer (one on game-based assessment, and the other on STEM education), multiple book chapters in highly regarded books, and numerous articles in many leading journals of the field, not to mention many other conference proceeding papers. Dr. Ge has been recognized for three prestigious awards – 2012 Outstanding Journal Article,
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2004 Outstanding Journal Article, and 2003 Young Scholar by Educational Technology Research & Development and the Association for Education Communications and Technology. Dr. Ge has been serving on the editorial boards of several important refereed journals, including Educational Technology Research & Development, Interdisciplinary Journal of Problem-based Learning, and Technology, and Knowledge and Learning. In addition, she is currently the Chair of the Problem-based Education Special Interest Group for the American Educational Research Association.

Dion Goh has a PhD in computer science. He is currently Associate Professor with Nanyang Technological University (Singapore) where is also the Director of the Masters of Information Systems program. His major areas of research are in gamification techniques for shaping user perceptions and motivating behavior, social media perceptions and practices, and evaluation of information systems and services. He has over 200 publications in these areas. Dr. Goh has led a number of funded projects in the use of games for mental health interventions, the use of gamification in mobile content sharing, and human computation games for data analytics.

Begoña Gros received the PhD degree in Pedagogy at the University of Barcelona in 1987. She was at the Open University of Catalunya (2007-2012), and currently is professor at the University of Barcelona. She is the director of the research group “Environments and materials for learning” (EMA). She is an author of more than 100 publications in the areas of the use of ICT in education, digital games for learning, learning design and innovation. She has participated in national and international projects funded by the European Union. She is an associated editor of the Journal “Cultura y Educación”. More information: https://www.researchgate.net/profile/Begona_Gros.

Antonio P. Gutierrez, Ph.D., is currently an Assistant Professor of Research at Georgia Southern University. He is interested in researching metacognition under the theory of self-regulated learning. More specifically, he is interested in how learners monitor their comprehension during learning episodes. His program of research includes examining the effects of dispositional characteristics (e.g., various aspects of motivation) and metacognitive monitoring training on learners’ calibration, confidence, and performance as well as investigating the latent dimensions of calibration to improve its measurement. In addition, he is currently examining the factors involved in the work life of faculty members and the aspects of academic organizations that influence their intent to leave or stay in the academe.

Douglas J. Hacker is a full professor at the University of Utah. Dr. Hacker received his Ph.D. in educational psychology from the University of Washington in 1994. From 1994 to 1999, Dr. Hacker was an assistant/associate professor in the Department of Counseling, Educational Psychology and Research at The University of Memphis. During those years, he worked in the areas of reading and writing processes, metacognition, self-regulated learning, teacher education, and school and program evaluation. Dr. Hacker moved to the University of Utah in 1999 and has continued his research in the previous areas and has added to them research in the area of the detection of deception. Also at the University of Utah, he served as chair of the Teaching and Learning Department. His publications have appeared in the Journal of Educational Psychology, Contemporary Educational Psychology, Journal of Experimental Psychology: Applied, and Journal of Experimental Education. At both universities, Dr. Hacker has maintained a strong commitment to work in schools, working directly with teachers by providing professional development in reading and writing instruction.
Raija Hämäläinen works as a Full Professor in the Faculty of Education, University of Jyväskylä. She has designed a long-term research project that focuses on investigating new learning spaces for future education. Currently, she is leading several research projects focusing on future learning technologies. Her main research interests deal with inquiry learning, orchestrating learning processes and scripted computer-supported collaborative learning in technology enhanced learning (TEL) environments. Her research has been based on active international collaboration in theoretical and design issues of TEL. Her recent publications include articles in Computers & Education, Teaching and Teacher Education, International Journal of Computer-Supported Collaborative Learning, Technology, Pedagogy and Education, and Educational Research Review.

Jason M. Harley is an Assistant Professor of Educational Technology and Educational Psychology at the University of Alberta. He completed his Ph.D. in Educational Psychology at McGill in the summer of 2014, and served as a Postdoctoral Fellow in the Computer Science and Operations Research Department at the Université de Montréal and Research Associate at McGill University in the Department of Educational and Counselling Psychology from 2014-2015. His research examines emotions, self and co-regulated learning, and advanced learning technologies, including intelligent tutoring systems, serious games, and mobile augmented reality. He has published over twenty journal articles, handbook chapters, and conference proceedings and presented or co-authored forty conference papers in peer-reviewed, international venues in education, psychology, and computer science. He has contributed to numerous research projects that have been funded by American and Canadian funding agencies and has been awarded doctoral and postdoctoral fellowships from the Fonds de recherche du Québec – Société et culture (FRQSC), and a Joseph-Armand Bombardier Canadian Graduate Scholarship (CGS) from the Social Science and Humanities Research Council of Canada (SSHRC). You can learn more about his scientific work that explores the intersections between advanced technology, psychological processes, and education on his website: https://sites.google.com/site/jasonmharley/.

Charles B. Hodges earned a Ph.D. from the Learning Sciences and Technologies program at Virginia Tech, and mathematics degrees from Fairmont State University (B.S.) and West Virginia University (M.S.). His professional interests are learner self-efficacy, teacher self-efficacy, teacher professional development, and the teaching and learning of computational thinking. He is an Associate Professor of Instructional Technology at Georgia Southern University where he teaches in the online Instructional Technology Program. He is the Editor-in-Chief of the journal TechTrends: Linking Research and Practice to Improve Learning.

Vivien S. Huan is an Associate Professor at Psychological Studies Academic Group, National Institute of Education, Nanyang Technological University, Singapore. Her research interests include juvenile delinquency, deviancy, serious and violent youth offenders, managing aggressive and disruptive students, conflict resolution, and youth at-risk related issues. She is the recipient for NIE’s Excellence in Teaching Commendation Award for 2006 to 2008, and NTU’s Nanyang Excellence in Teaching Award in 2008. Apart from her work at the National Institute of Education, Dr. Huan is a panel advisor with the Singapore Youth Court and is also on the expert panel of the Family Court.

Dirk Ifenthaler is Professor for Learning, Design and Technology at the University of Mannheim, Germany. Adjunct Professor at Deakin University, Australia, and Affiliate Research Scholar at the University of Victoria, Canada. His research focuses on instructional design, digital learning environments, and serious games.
Fengfeng Ke is an associate professor in Educational Psychology and Learning Systems at the Florida State University. Her research has focused on digital game-based learning, inclusive design of computer-supported collaborative learning, and mixed-reality-integrated immersive learning.

Kevin Kee is the Dean of the Faculty of Arts / La Faculté des arts à l’Université d’Ottawa / at the University of Ottawa, the world’s largest bilingual university, and one of Canada’s top 10 research-intensive institutions. The Faculty of Arts comprises 17 departments, centres and institutes in Languages and Literatures, the Humanities, and the Fine and Performing Arts. His research lies at the intersection of history, computing, education, and game studies. Many of his research projects develop and support university to public- and private-sector technology transfers and partnerships. Together with his team he has produced history Web sites, games and simulations. He has published books and articles on the use of computer simulations for history and history teaching and learning, and on Canadian cultural history, and is a proud winner of a Faculty Award for Excellence in Teaching.

David Kirschner is an Assistant Professor of Sociology at Georgia Gwinnett College. He earned his Ph.D. in Sociology at Nanyang Technological University in Singapore in 2014. His dissertation focused on how players make meaning in virtual environments and how players experience socialization into digital games. Leveraging his background in social science education, David’s work brings together human-computer interaction, learning, literacy, and new media. David’s current research involves exploring communities of practice among human and non-human agents in digital games and developing a gamified, web-based platform for health activism.

Timo Lainema is a Senior Research Fellow at Turku School of Economics, University of Turku, Finland. He holds a Ph.D. and a master degree in economics and business administration from TSE with an emphasis on Information Management. His Ph.D. thesis (2003) focused on the use of business simulation games in business process education. He constructed his first business simulation game in
1987 and since then he has applied simulation games in in university teaching, executive education and in in-house management training programs. His research interests are learning through simulation gaming and knowledge sharing in virtual working contexts.

**Susanne Lajoie** is a Professor and Canadian Research Chair Tier 1 in Advanced Technologies for Learning in Authentic Settings in the Department of Educational and Counselling Psychology at McGill University and a member of the Centre for Medical Education. She received her Doctorate from Stanford University. Dr. Lajoie is the Director of the Learning Environments Across Disciplines partnership grant funded by the Social Sciences and Humanities Research Council in Canada. Her research involves the design of technology rich learning environments for educational and professional practices. She explores how theories of learning and affect can be used to guide the design of advanced technology rich learning environments in different domains, i.e. medicine, mathematics, history, etc. These environments serve as research platforms to study student engagement and problem solving in authentic settings. She uses a cognitive approach to identify learning trajectories that help novice learners become more skilled in specific areas and designs computer tools to enhance self-regulation, memory, and domain-specific learning.

**Jaejin Lee** (Ph.D.) is a research professor in Center for Teaching and Learning at University of Seoul. His research interests focus on educational uses of new media and 3D educational games in public education. His R&D experience includes designing 3D learning objects and environments and examining the effectiveness of immersive media environments for science learning and engagement. His recent interests include the use of Game Based Learning (GBL) in public classrooms and integration of gamification elements in diverse teaching and learning environments such as flipped instruction and blended learning. He is also interested in developing new data analysis techniques using data mining and data visualization for the examination of learning patterns in GBL and other online learning.

**Min Liu** (Ed.D) is Professor of Learning Technologies at the University of Texas at Austin. She is the Program Coordinator & Graduate Advisor. Her teaching and research interests center on educational uses of new media and other emerging technologies and their impact on teaching and learning for learners at all age levels. She has published over 64 research articles in leading peer-reviewed educational technology journals (e.g., Educational Technology Research and Development (EDR&D), Computers in Human Behavior (CHB), Journal of Research on Technology in Education (JRTE), Journal of Educational Computing Research (JECR), Interdisciplinary Journal of Problem-Based Learning, (IJPBL), The American Journal of Distance Education, (AJDE), Journal of Educational Technology & Society, Journal of Interactive Learning Research, The International Journal of Gaming and Computer-Mediated Simulations), nine peer-reviewed book chapters, 48 peer-reviewed conference proceeding papers, and presents regularly at national and international conferences. She has also served on numerous editorial boards for peer-reviewed research journals. Her current R&D projects include studying the design and effectiveness of immersive, rich media environments on learning and motivation; learning analytics and data visualizations; understanding MOOCs as an emerging online learning tool; examining the affordances and constraints of using mobile technologies in teaching and learning; and use of Web 2.0 tools to facilitate instruction.

**Kimmo Oksanen** is a project manager at Digital Lessons Finland Ltd. Oksanen has been doing research within the field of game-based learning for years. His PhD thesis was about supporting col-
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laborative learning and investigating learners’ experiences in serious games. Thus, his main research interests include serious game design, collaborative learning and gaming experiences in serious games. Oksanen’s research is closely connected to the practical design and development of serious games and other virtual environments especially from the perspective of collaborative learning.

Yoon Phaik Ooi is a Research Scientist at the Division of Clinical Psychology and Psychotherapy, Department of Psychology, University of Basel, Switzerland. She is also a Visiting Research Fellow with the Institute of Mental Health, Singapore. She obtained her PhD from the National Institute of Education, Nanyang Technological University, Singapore. She is a certified independent trainer for the Autism Diagnostic Interview – Revised. Her research interests are on evidence-based assessments and psychosocial treatments for children and adolescents, in particular, Autism Spectrum Disorders and Disruptive Behavior Disorders.

Kylie Peppler is an Associate Professor in the Learning Sciences Program at Indiana University and the director of the Creativity Labs. An artist by training, Peppler engages in research that focuses on the intersection of arts, technology, and interest-driven learning. As Creativity Labs Director, Peppler brings together educators, designers, artists, and learning theorists interested in constructionist and hands-on, design-based learning. She works to capture youths’ pre-existing interests in areas such as new media, fashion, and design while supporting learning and creativity in arts, design, and STEM (science, technology, engineering, math) areas.

Eric Poitras is an Assistant Professor for Instructional Design and Educational Technology in the Department of Educational Psychology at the University of Utah. He graduated from McGill University, where he earned a graduate degree in the Learning Sciences and worked as a postdoctoral researcher at the Learning Environments Across Disciplines research partnership. His research aim is to improve the adaptive capabilities of instructional systems and technologies designed as cognitive and metacognitive tools as a means to foster self-regulated learning; in particular, the capabilities of intelligent tutoring systems and augmented reality applications to capture and analyze learner behaviors in order to deliver the most suitable instructional content in domain areas such as medical diagnostic reasoning, historical thinking, and teacher professional development.

Madlyn Runburg is the Director of Education Initiatives at the Natural History Museum of Utah. Madlyn has a M.A. in Education from Northern Arizona University. Her work focuses on ways in which informal institutions like museums can support K-12 teachers and students with a particular focus on technology enabled learning. She works in partnership with diverse groups of stakeholders – both locally and nationally - to provide project leadership on new and emerging programs. Madlyn’s work has been recognized at national conferences in education, gaming and science, including the New Media Consortium, the Society of Vertebrate Paleontology, and the Foundations of Digital Games conference.

Soonhwa Seok is a research professor at Korea University. Her research foci include assistive technology and the digital literacy of students with autism, intellectual, and developmental disabilities. She has conducted extensive research in the area of behavior interventions using single case design. Complementing her research interests, she serves as a reviewer for a number of journals, to include Educational Technology Research and Development and the British Journal of Educational Technology.
Stephen T. Slota (PhD) is an Instructional Design Specialist and Game Design Scientist. He holds a Ph.D. in Educational Psychology: Cognition, Instruction, & Learning Technologies and has worked on a variety of game and instructional design projects with organizations including Arizona State University’s Center for Games & Impact, Intel Corporation, Pfizer, InSync Training, LLC, and the University of Connecticut Health Center. Separate from his other ventures, he co-owns and operates an educational game development and consultation company, The Pericles Group, LLC, with colleagues Kevin Ballestrini and Dr. Roger Travis.

Philipp Sonnleitner, Ph.D., is a researcher at the Luxembourg Centre of Educational Testing (LU-CET) at the University of Luxembourg. In his research, he explores students’ complex problem solving behavior and which benefits computer-based assessment instruments provide for testing students’ competencies and skills. An outcome of his work is the Genetics Lab (www.assessment.lu/GeneticsLab), a web-based, free online tool to assess complex problem solving behavior that was especially developed for the educational sector. Meanwhile, the Genetics Lab is available in English, French, German, and Italian and enjoys a growing global user community. In addition, Dr. Sonnleitner is responsible for test development within the Luxembourghish school monitoring program.

David Strayer is a professor in the Cognition and Neural Sciences in the Department of Psychology at the University of Utah. He received his Ph.D. from the University of Illinois@ Urbana-Champaign in 1989 and worked at GTE laboratories before joining the faculty at the University of Utah in 1991. Dr. Strayer is a Fellow of the Association for Psychological Sciences, and a recipient of the University of Utah Distinguished Scholarly and Creative Research Award. His research examines basic and applied issues of attention and cognitive control. For the last 15 years he has been conducting research on attention and driver distraction.

Greg Szczyrbak is the Learning Technologies Librarian at Millersville University where he enjoys contributing to professional development initiatives, serving as a member of the Center for Academic Excellence advisory board and as co-director of the Digital Learning Studio. Greg presents about libraries and learning technologies including learning space design, innovative classroom technology, and creative approaches to online learning. He has a Masters of Library and Information Science from Drexel University and a Masters of Distance Education from University of Maryland University College.

Jean Lee Tan obtained her PhD in Information Studies from Nanyang Technological University. She is currently a Senior Education Officer with the Ministry of Education, Singapore and is also lecturing at the Division of Information Studies, Wee Kim Wee School of Communication and Information, NTU. Her research interests primarily lie in new literacies in education and the innovative use of IDM-based learning environments which have the potential to bring about engaged learning for students. Her other interests are on information management, user interfaces and usability studies. Her latest project involved a research to explore how game-based pedagogies can affect the cognitive-social development of children.

Naomi Thompson is a Graduate Research Assistant working in the Creativity Labs with Dr. Kylie Peppler. Her background is in psychology, education, and arts programming. Her interests include learning in informal spaces, such as museums and libraries, hands-on learning, and utilizing activities such as crafting and making to encourage wider interest and participation in STEM fields. She is cur-
rently assisting with BioSim, an NSF funded project to continue developing a participatory simulation where young students enact the roles of honeybees and biological systems through the assistance of electronically-enhanced e-puppets to enhance understanding of complex systems.

Thanh N. Truong received his Ph.D. degree in Chemistry from the University of Minnesota in 1990 and appointed the Assistant Professor position in the Chemistry Department at the University of Utah in 1992 and raised to the current rank of Full Professor in 2002. Prof. Truong was named as one of the prestigious National Science Foundation Young Investigators in 1993. In addition, he has been the affiliated member of the Global Change and Sustainability Center and the Interdisciplinary Computational Engineering and Science Graduate Program at the University of Utah. Dr. Truong is the author or co-author of more than 190 publications and two US/International patents. His current research spans a broad range from computational chemistry, computer-aided drug design, and nanomaterials science to cyberinfrastructure development for research and education.

Michael F. Young (PhD) is an Associate Professor of Educational Psychology at the University of Connecticut and serves as both leader of the UConn General Education Oversight Committee and coordinator for the Two Summers Master’s/Sixth Year degree program in Learning Technologies. He teaches undergraduate and graduate courses relating to Instructional Design, Situated Cognition, and Learning Theory, and he is a member of the Ellington, Connecticut Board of Education. His primary research interests include contemporary learning theory, instructional design, the strategic application of learning technologies in K-12 and higher education, online course development, and game-based learning.