

HEATHER LEARY, PH.D.

Instructional Psychology & Technology
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Education

- 2012 **Doctor of Philosophy (PhD)**, Instructional Technology and Learning Sciences
Utah State University, Logan, UT
- 2005 **Master of Education (MEd)**, Instructional Technology,
Utah State University, Logan, UT
- 2000 **Bachelor of Fine Arts (BFA)**, Photography
Utah State University, Logan, UT

Work Experience

- 2022-Present **Associate Professor**
Instructional Psychology & Technology, Brigham Young University, Provo, UT
- 2016-2022 **Assistant Professor**
Instructional Psychology & Technology, Brigham Young University, Provo, UT
- 2015-2016 **Curriculum Designer**
Online Curriculum Development, Brigham Young University – Idaho, Rexburg, ID
- 2011-2015 **Research Associate**
Institute of Cognitive Science, University of Colorado Boulder, Boulder, CO

Awards & Honors

- 2022 **Scholarship Award**
Faculty Women's Association, Brigham Young University
- 2021 **Nancy Peery Marriott Excellence in Mentoring Award**
McKay School of Education, Brigham Young University
- 2020 **Outstanding Service Award**
Research & Theory Division, Association for Educational Communications & Technology
- 2009 **Lee W. Cochran Intern**
One of 5 graduate students selected for the ECT Internship held at the 2009 Association for Educational Communications and Technology annual conference, October, Louisville, KY
- 2009 **Best Student Paper Award**
Expert Versus Novice Tutors: Impacts on Students Outcomes in Problem Based Learning
American Educational Research Association Sig ATL/LS, April, San Diego, CA

Research Interests

My research focuses on tackling problems of practice in K12 and higher education using innovative approaches, design activities, technology, and iterations to solve them. I collaboratively work with practioners to bridge research and practice in various disciplines using design-based research (DBR), problem-based learning (PBL), and research-practice partnerships (RPPs).

Select Refereed Journal Manuscripts, Books, and Book Chapters

- Gardner, K. & **Leary, H.** (in press). Online learning for first-generation and underrepresented minoritized students: A literature review using a model of student engagement. *Online Learning Journal*.
- Archambault, L., **Leary, H.**, & Rice, K. (2022). Pillars of Online Pedagogy: A Framework for Teaching in Online Learning Environments. *Educational Psychologist*.
- Powell, S. & **Leary, H.** (2021). Measuring learner-content interaction in digitally augmented learning experiences. *Distance Education*, 42(3).
- Leary, H.**, Lee, V. R., & Recker, M. (2021). It's more than just technology adoption: Understanding variations in teachers' use of an online planning tool. *TechTrends*, 65.
- Leary, H.**, Dopp, C., Turley, C., Cheney, M., Simmons, Z., Graham, C. R., & Hatch, R. (2020). Professional development for online teaching: A literature review. *Online Learning*, 24(4), 254-275.
- Leary, H.**, Walker, A., Lefler, M. & Kuo, Y. (2019). Self-Directed Learning in Problem-Based Learning: A literature review. In Moallem, M., Hung, W., & Dabbagh, N. (Eds.), *The Wiley Handbook of Problem-Based Learning*. New Jersey: John Wiley & Sons.
- Leary, H.** & Walker, A. (2018). Meta-analysis and meta-synthesis methodologies: Rigorously piecing together research. *TechTrends*, 62(5), 525-534.
- Leary, H.** & Severance, S. (2018). Research-Practice Partnerships: Addressing K-12 Educational Problems Through Active Collaborations. In Branch, R. M. (Ed.) *Educational Media and Technology Yearbook, Volume 41*. New York: Springer.
- Leary, H.**, Severance, S., Penuel, W. R., Quigley, D., & Sumner, T. (2016). Designing a Deeply Digital Science Curriculum: Supporting Teacher Learning and Implementation with Organizational Technologies. *Journal of Science Teacher Education*, 27(1), 61-77.
- Johnson, R., Severance, S., Penuel, W. R., & **Leary, H.** (2016). Teachers, Tasks, and Tensions: Lessons from a Research-Practice Partnership. *Journal of Mathematics Teacher Education*, 19 (1/2).
- Severance, S., Penuel, W. R., Sumner, T., **Leary, H.** (2016). Organizing for Teacher Agency in Curricular Co-Design. *Journal of the Learning Sciences*, 25(4), 531-564.
- Ye, L., Recker, M., Walker, A., **Leary, H.**, & Yuan, M. (2015). Expanding Approaches for Understanding Impact: Integrating Technology, Curriculum, and Open Educational Resources in Science Education. *Educational Technology Research and Development*, 63(3), 355-380.
- Walker, A., **Leary, H.**, Hmelo-Silver, C.E., & Ertmer, P.A. (Eds.). (2015). *Essential Readings in Problem-Based Learning: Exploring and Extending the Legacy of Howard S. Barrows*. West Lafayette, IN: Purdue University Press.
- Lee, V. R., **Leary, H.**, Sellers, L., Recker, M. (2014). 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*, 23(3), 309-323. doi: 10.1007/s10956-013-9465-5
- Leary, H.**, Walker, A., Shelton, B. E., & Fitt, M. H. (2013). Exploring the Relationships Between Tutor Background, Tutor Training and Student Learning: A Problem-Based Learning Meta-Analysis. *Interdisciplinary Journal of Problem-Based Learning*, 7(1), 40-66.
- Walker, A., Recker, M., Ye, L., Robertshaw, M. B., Sellers, L., & **Leary, H.** (2012). Comparing Technology-Related Teacher Professional Development Designs: A multilevel study of teacher and student impacts. *Educational Technology Research and Development*, 60(3), 421-444.

- Walker, A., Recker, M., Robertshaw, M. B, Olsen, J., **Leary, H.**, Ye, L., & Sellers, L. (2011). Integrating Technology and Problem-Based Learning: A Mixed Methods Study of Two Teacher Professional Development Approaches. *Interdisciplinary Journal of Problem Based Learning*, 5(2), 70-94.
- Walker, A. & **Leary, H.** (2009). A Problem Based Learning Meta-analysis: Differences Across Problem Types, Implementation Types, Disciplines, and Assessment Levels. *Interdisciplinary Journal of Problem Based Learning*, 3(1), 6-28.
- Recker, M., Walker, A., Giersch, S., Mao, X., Halioris, S., Palmer, B., Johnson, D., **Leary, H.**, & Robertshaw, M.B. (2007). A Study of Teachers' Use of Online Learning Resources to Design Classroom Activities. *New Review of Hypermedia and Multimedia*, 13(2), 117-134.

Select Refereed Conference Proceedings

- West, L., Measom, E., **Leary, H.**, Call, H., Tuiloma, S., Arts, A., Rogers, A., Brooksby, D., & Nielsen, G. (2022). Thrive Online: Preparing Marginalized Learners for Success in Online Learning. In Chinn, C., Tan, E., Chan, C., & Kali, Y. (Eds.), *International Collaboration Toward Educational Innovation for All: Overarching Research, Development, and Practices, 16th International Conference of the Learning Sciences (ICLS) 2022*, pp. 2166-2167. Hiroshima, Japan: International Society of the Learning Sciences.
- Allman, B., & **Leary, H.** (2021). A template for facilitating knowledge-building discourse in online teacher professional development. In Hmelo-Silver, C., De Wever, B., & Oshima, J. (Eds.), *Reflecting the Past and Embracing the Future, 14th International Conference on Computer Supported Collaborative Learning (CSCL) 2021*, pp. 293-294. Bochum, Germany: International Society of the Learning Sciences.
- Johnstun, K., **Leary, H.**, & Jensen, B. (2019). Young interpreters: The situated as supportive. In Lund, K., Niccolai, G., Lavoué, E., Hmelo-Silver, C., Gweon, G., and Baker, M. (Eds.), *A Wide Lens: Combining Embodied, Enactive, Extended, and Embedded Learning in Collaborative Settings, 13th International Conference on Computer Supported Collaborative Learning (CSCL) 2019*, Volume 2 (pp. 557-560). Lyon, France: International Society of the Learning Sciences.
- Powell, S., **Leary, H.**, McLachlan, L., Brock, K. (2018). Teachers collaboratively creating micro-credentials for professional development. In J. Kay & R. Luckin (Eds.), *Rethinking learning in the digital age: Making the Learning Sciences count 2018, Volume 2* (pp. 1157-1160). London, England: International Society of the Learning Sciences.

Select Conference Presentations and Workshops

- Archambault, L., **Leary, H.**, & Rice, K. (2023, April). Pillars of Online Pedagogy: A Framework for Teaching Online. In C. M. Greenhow (Chair), *Diverse Perspectives on Improving Online Learning Theory, Research, and Practice* [Symposium]. American Educational Research Association Annual Conference, Chicago, IL.
- Hudson, M., Sansom, R., **Leary, H.**, Longhurst, M., Stowers, J., Poulsen, T., & Smith, C., (2023, March). Technology-Mediated Lesson Study: Improving Rural Science Teachers' Three-Dimensional Science Teaching Practices. Paper presentation at the 34th International Conference of the Society for Information Technology and Teacher Education, New Orleans, LA.
- Call, H., Arts, A., Measom, E., West, L., Tuiloma, S., Sandberg, B., & **Leary, H.** (2022, October). Embedding Learning Resources in Online Courses to Support Immediate Student Needs. Paper presentation at the Association for Educational Communications and Technology annual conference, Las Vegas, NV.
- Romas, S., Soriano, N., Cavanaugh, B., Ralston, N., **Leary, H.**, & Mitchell, J. (2022, July). Universities and RPPs: Leveraging Doctoral Students and Management Structures to Sustain RPPs. Presentation at the National Network of Education Research-Practice Partnerships annual forum, Virtual Conference.
- McCulloch, T., & **Leary, H.** (2022, June). Yes, a Picture is Worth 1,000 words: How to Improve Your Students Critical Thinking and Develop Better SEEd Phenomena Observations with Visual Thinking Strategies.

Workshop at the annual Arts Express conference, Saratoga Springs, UT.

- Leary, H.**, Brock, K., Roberts, C., & Rosenvall, A. (2022, April). Elementary science storylines with arts adaptations: A research-practice partnership. Paper presentation at the American Educational Research Association annual conference, San Diego, CA.
- Leary, H.**, Allman, B., Short, C. R., Wadham, R. L., & Zhang, J. (2021, November). Building the plane mid-flight: Navigating the tumultuous skies of design-based research. Workshop at the International Convention of the Association for Educational Communications and Technology, Chicago, IL.
- Leary, H.**, Jackson, B., & Hunter, K. (2019, October). STEM and the arts explored through a meta-synthesis. Presentation at the Association for Educational Communications and Technology international convention, Las Vegas, NV.
- Leary, H.**, Jensen, B., Mason, S., Allman, B. (2019, April). Institutional arrangements to foster connections and prepare partners in RPPs. Presentation for the annual conference of the American Educational Research Association, Toronto, Canada.
- Leary, H.**, Butcher, K., & Devaul, H. (2018, April). Impact of an ICT planning tool on student-centered technology integration. Presentation for the annual conference of the American Educational Research Association, New York, NY.
- Leary, H.**, Devaul, H., & Sumner, T. (2017, April). Engaging Geographically Distributed Teachers in Technology Design: The scenario-guided design evaluation methodology. Presentation for the annual conference of the American Educational Research Association, San Antonio, TX.
- Leary, H.**, Severance, S., Penuel, W. R., Quigley, D., Sumner, T., & Devaul, H. (2016, April). Supporting the Design and Implementation of a Digital Science Curriculum. Paper presentation for the annual conference of the American Educational Research Association, Washington, D.C.
- Leary, H.**, Sumner, T., Penuel, W. R., Johnson, R., Severance, S., Devaul, H., & Dibie, O. (2014, November). Building Teachers' Design Capacity: Curriculum, Adaptations, Implementation. Presentation at the Association for Educational Communications and Technology international convention, Jacksonville, FL.
- Leary, H.**, Lee, V. R., & Recker, M. (2014, April). A "Use Diffusion" Perspective on Teachers' Adoption and Use of a Social Teaching Platform. Paper presentation at the *American Educational Research Association annual conference*, Philadelphia, PA.
- Belland, B., Walker, A., Olsen, M. W., & **Leary, H.** (2012, April). Impact of Scaffolding Characteristics and Study Quality on Learner Outcomes in STEM Education: A meta-analysis. Presentation at the American Educational Research Association, Vancouver, Canada.
- Walker, A., Recker, M., **Leary, H.**, & Robertshaw, M. B. (2010, May). Incorporating Technology and Problem-Based Learning: Professional Development for K-12 Teachers. Paper presentation at the American Educational Research Association annual meeting, Denver, CO.

Funded Contracts/Grants

- *The Impact of Institutional Support on Research-Practice Partnership Projects*, BYU CITES Fellowship, **Heather Leary (PI)**, Jaynie Mitchell (co-PI), \$30,00, 2022-2024.
- *Developing Three-Dimensional Science Teachers in Underserved Rural Settings*, National Science Foundation, Rebecca Sansom (PI), **Heather Leary (co-PI)**, Joshua Stowers (co-PI), \$2,998,817, 2021-2025.
- *Increasing Teacher Capacity to Make Curricular Adaptations for Arts Supporting STEM*, BYU President's Innovation Fund Research-Practice Partnership Grants, **Heather Leary (PI)**, \$14,950, 2021-2022.
- *Building Teacher Capacity with STEM and Arts*, McKay School of Education Research Grant, **Heather Leary (PI)**, \$32,980, 2019-2020.
- *Fostering Arrangements for Research-Practice Partnership Project in the BYU-Public School Partnership*,

McKay School of Education BYU Center for the Improvement of Teacher Education and Schooling (CITES) Fellowship, **Heather Leary (PI)**, Bryant Jensen (co-PI), \$20,000, 2018-2019.

Courses Taught

Undergraduate

- IP&T 371: Integrating K-12 Educational Technology I
- IP&T 372: Integrating K-12 Educational Technology II

Graduate

- EIME 720: Design-Based Research
- IP&T 515R: Problem-Based Learning
- IP&T 520: Foundations of Instructional Design
- IP&T 653: Qualitative Research I
- IP&T 661: Introduction to Evaluation
- IP&T 753: Advanced Qualitative Research

Mentoring - Brigham Young University

Master's students (chair): Elizabeth Robinson, Kevin Johnstun, Nick Gubler, Melissa Cavan, Jennifer Ramsey, Rhonda Sandberg

Doctoral students (chair): Carolyn Andrews, Sandy Powell, Bohdana Allman, Jennifer Price, Chad Turley

Service

Journal Column Editor

- 2018-Present, History Corner (co-editor with Barbara Lockee), *TechTrends*

Journal Advisory Board Member

- 2021-Present, *Instructional Science*
- 2015-2018, *Interdisciplinary Journal of Problem-Based Learning*

Journal Reviewing

- 2017-Present, *Instructional Science*
- 2012-Present, *Educational Technology Research & Development*
- 2011-Present, *Interdisciplinary Journal of Problem-Based Learning*

Leadership Positions

- **Chair**, History and Archives Committee, Association for Educational Communications and Technology, 2015-Present
- **Program Chair**, Problem-Based and Project-Based Learning SIG, American Educational Research Association, 2021-2023
- **President-Elect/President/Past-President**, Research & Theory Division, Association for Educational Communications and Technology, 2020-2023
- **Chair**, Leadership Development Committee, Association for Educational Communications and Technology, 2018-2021
- **Professional Development Coordinator**, Research & Theory Division, Association for Educational Communications and Technology, 2017-2020

Professional Memberships

- American Educational Research Association (AERA), 2007-Present
- Association for Educational Communications and Technology (AECT), 2007-Present
- International Society of the Learning Sciences (ISLS), 2012-Present