Minds Online
Teaching Effectively with Technology

Michelle D. Miller

"As an expert in the cognitive science of learning and an award-winning educator, Miller is well-poised to bridge the gap between science and practice. Minds Online translates principles and findings from cognitive science into concrete, actionable tips and recommendations for educators trying to incorporate technology into their teaching. This is a terrific book."

—Sean Kang, Dartmouth College

From wired campuses to smart classrooms to massive open online courses (MOOCs), digital technology is now firmly embedded in higher education. But the dizzying pace of innovation, combined with a dearth of evidence on the effectiveness of new tools and programs, challenges educators to articulate how technology can best fit into the learning experience. *Minds Online* is a concise, nontechnical guide for academic leaders and instructors who seek to advance learning in this changing environment, through a sound scientific understanding of how the human brain assimilates knowledge.

Drawing on the latest findings from neuroscience and cognitive psychology, Michelle Miller explores how attention, memory, and higher thought processes such as critical thinking and analytical reasoning can be enhanced through technology-aided approaches. The techniques she describes promote retention of course material through frequent low-stakes testing and practice, and help prevent counterproductive cramming by encouraging better spacing of study. Online activities also help students become more adept with cognitive aids, such as analogies, that allow them to apply learning across situations and disciplines. Miller guides instructors through the process of creating a syllabus for a cognitively optimized, fully online course. She presents innovative ideas for how to use multimedia effectively, how to take advantage of learners' existing knowledge, and how to motivate students to do their best work and complete the course.

For a generation born into the Internet age, educational technology designed with the brain in mind offers a natural pathway to the pleasures and rewards of deep learning.

Michelle D. Miller is Co-Director of the First Year Learning Initiative and Professor of Psychology at Northern Arizona University.