UC SANTA BARBARA

THE Current

May 3, 2021
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A Teachable Moment

In the age of Zoom schooling, few researchers' work resonates quite like Richard Mayer's. A distinguished professor of psychology in UC Santa Barbara's Department of Psychological and Brain Sciences, he studies how people learn — particularly in computer-based environments.

In his more than 40 years at UCSB he has won numerous awards for his contributions. The latest: The UCSB Academic Senate has awarded Mayer the Faculty Research Lecture Award for 2020-21.

"I congratulate Rich on receiving the highest honor bestowed by UC Santa Barbara's faculty senate," said Pierre Wiltzius, executive dean of the College of Letters and Science. "His contributions to the science of learning have greatly advanced both educational theory and practice. As a pioneer in his field and a leading scholar on this campus, he is most deserving of this prestigious recognition."

"I want to thank the Academic Senate for this exciting recognition," Mayer said. "Receiving the Faculty Research Lecturer Award means a lot to me, especially because it comes from my UCSB peers. Throughout my 40-plus years at UCSB, I have always felt privileged to be a member of our UCSB academic community. It is a heartfelt honor for me to be able to work at a university that nurtures and supports research and scholarship."

Over the years Mayer and his colleagues have developed a theory of how multimedia learning works — that is, how people learn from instruction involving

words and graphics — and they've amassed a set of 15 evidence-based principles for how to design effective multimedia instruction based on more than 200 experiments. The work, he said, continues a 100-year-long effort in psychology and education to understand how to teach for transfer.

"Looking forward, this work is directly relevant to improving online learning in the age of Zoom and beyond, including designing effective instruction involving video, animation, games, simulations, onscreen pedagogical agents and virtual reality," Mayer said. "An important implication of our work is that academic learning is caused by instructional methods rather than instructional media, so our focus is on how to adapt the affordances to educational technologies to support how people learn."

A special focus of Mayer's recent work concerns how to help students maintain a high level of motivation to learn, especially in an online environment. His lab is exploring the effectiveness of asking students to employ generative learning activities during learning, such as writing explanations in their own words during pauses in an online video lesson.

"We also are exploring instructional design features aimed at increasing motivation and positive emotion with online lectures, such as having the instructor maintain eye contact, display human-like gestures, draw as she lectures, and use a happy tone of voice," he said. "This work is aimed at helping students maintain their interest in online lessons. We also are examining how to design games for training cognitive skills and how to design virtual reality lessons for academic learning."

For Mayer, his research on learning is theoretical and practical: how to help people learn so they can take their new knowledge and apply it in new situations.

"In a field that is sometimes based on fads, expert opinion, ideology or common practice, my colleagues and I opt to take an evidence-based approach that is grounded in learning theory," he said. "In this effort, I appreciate the support of my family, my mentors, my colleagues at UCSB and from around the world, my students, my funding agencies, my department, and my campus. I have learned that scientific research is a multidisciplinary, team effort, and I sincerely appreciate the opportunity to be part of the fruitful research environment that UCSB affords."

About UC Santa Barbara

The University of California, Santa Barbara is a leading research institution that also provides a comprehensive liberal arts learning experience. Our academic community of faculty, students, and staff is characterized by a culture of interdisciplinary collaboration that is responsive to the needs of our multicultural and global society. All of this takes place within a living and learning environment like no other, as we draw inspiration from the beauty and resources of our extraordinary location at the edge of the Pacific Ocean.