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978-0-521-67758-5 - Cognitive Load Theory

Edited by Jan L. Plass, Roxana Moreno and Roland Brunken

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## COGNITIVE LOAD THEORY

Cognitive load theory (CLT) is one of the most influential theories in instructional design, a highly effective guide for the design of multimedia and other learning materials. This edited volume brings together the most prolific researchers from around the world who study various aspects of cognitive load to discuss its current theoretical as well as practical issues. The book is divided into three parts: The first part describes the theoretical foundations and assumptions of CLT, the second discusses the empirical findings about the application of CLT to the design of learning environments, and the third part concludes the book with discussions and suggestions for new directions for future research. It aims to become the standard handbook in CLT for researchers and graduate students in psychology, education, and educational technology.

Jan L. Plass is Associate Professor of Educational Communication and Technology in the Steinhardt School of Culture, Education, and Human Development at New York University (NYU), where he co-directs the Games for Learning Institute. He is also the founding director of the Consortium for Research and Evaluation of Advanced Technologies in Education (CREATE). His research is at the intersection of cognitive science, learning sciences, and design, and seeks to enhance the educational effectiveness of visual environments. Dr. Plass's current focus is on the cognitive and emotional aspects of information design and the interaction design of simulations and educational games for science education and second language acquisition. He has received funding for his research from the U.S. Department of Education's Institute of Education Sciences, the National Science Foundation, the National Institutes of Health, and, most recently, Microsoft Research and the Motorola Foundation.

Roxana Moreno is Educational Psychology Professor at the University of New Mexico. Her research interests are in applying cognitive-affective theories of learning to derive principles of instructional design for a diversity of learners. Her investigations involve undergraduate students as well as K–12 students who are culturally and linguistically diverse. Dr. Moreno's most recent projects include an engineering education grant aimed at applying empirically based technology tools to foster problem solving and cognitive flexibility in pre-college students and the "Bridging the Gap Between Theory and Practice in Teacher Education: Guided Interactive Virtual Environments for Case-Based Learning" grant, for which she received the prestigious Presidential Early Career Award in Science and Engineering. Other awards and honors include the American Psychological Association Richard E. Snow Award, being a Fulbright Senior Specialist in the areas of education and instructional media design, and an appointment as a veteran social scientist for the Department of Education.

Roland Brünken is Full Professor in Education and Dean for Student Affairs of the Faculty of Empirical Human Sciences at Saarland University, Germany. He is also Speaker of the special interest group Educational Psychology of the German Psychological Association (DGPs). His main research interests are concerned with using new technology for education, direct measurement of cognitive load by behavioral measures, and applying cognitive psychology to the instructional design of multimedia learning environments.

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[More information](#)

## CONTENTS

<i>Contributors</i>	<i>page</i> vii
Introduction	1
PART ONE. THEORY	
1 Cognitive Load Theory: Historical Development and Relation to Other Theories <i>Roxana Moreno and Babette Park</i>	9
2 Cognitive Load Theory: Recent Theoretical Advances <i>John Sweller</i>	29
3 Schema Acquisition and Sources of Cognitive Load <i>Slava Kalyuga</i>	48
4 Individual Differences and Cognitive Load Theory <i>Jan L. Plass, Slava Kalyuga, and Detlev Leutner</i>	65
PART TWO. EMPIRICAL EVIDENCE	
5 Learning from Worked-Out Examples and Problem Solving <i>Alexander Renkl and Robert K. Atkinson</i>	91
6 Instructional Control of Cognitive Load in the Design of Complex Learning Environments <i>Liesbeth Kester, Fred Paas, and Jeroen J. G. van Merriënboer</i>	109
7 Techniques That Reduce Extraneous Cognitive Load and Manage Intrinsic Cognitive Load during Multimedia Learning <i>Richard E. Mayer and Roxana Moreno</i>	131

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Frontmatter

[More information](#)

vi

*Contents*

- 8 Techniques That Increase Generative Processing in  
Multimedia Learning: Open Questions for Cognitive  
Load Research 153  
*Roxana Moreno and Richard E. Mayer*

## PART THREE. DISCUSSION

- 9 Measuring Cognitive Load 181  
*Roland Brünken, Tina Seufert, and Fred Paas*
- 10 From Neo-Behaviorism to Neuroscience: Perspectives on the  
Origins and Future Contributions of Cognitive Load Research 203  
*Richard E. Clark and Vincent P. Clark*
- 11 Cognitive Load in Learning with Multiple Representations 229  
*Holger Horz and Wolfgang Schnotz*
- 12 Current Issues and Open Questions in Cognitive  
Load Research 253  
*Roland Brünken, Jan L. Plass, and Roxana Moreno*
- Index* 273

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