

MULTIMEDIA LEARNING

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I. Introduction to Multimedia Learning

A. PURPOSE

For the last dozen years, my colleagues and I at the University of California, Santa Barbara (UCSB) have been investigating the nature of multimedia learning with a goal of building a research-based theory of how people learn from words and pictures. In this chapter, I summarize the fruits of this effort by presenting an introduction to key concepts in multimedia learning, a description of the materials we have used in our studies, a cognitive theory of multimedia learning, and a summary of nine theory-based effects that we have discovered in our research. In summarizing our nine theory-based effects, we draw on a corpus of 20 research articles that contain data for approximately 60 tests of our theory.

B. DEFINITIONS

Multimedia learning occurs when a learner builds a mental representation from words and pictures that have been presented. This definition is broad enough to include book-based environments consisting of text and illustrations, computer-based environments consisting of narration and animation, and virtual game environments consisting of interactive speech and animated microworlds.

For purposes of our research program, *multimedia instructional messages* (which we also refer to as *multimedia messages*) are presentations of material using words