Cognitive Function of Multimedia Learning

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Abstract

Multimedia environments consist of verbal and visual representations that, if appropriately processed, allow for the construction of an integrated mental model of the content. Whereas much is known on how students learn from verbal representations, there are fewer insights regarding the processing of visual information, alone or in conjunction with text. Multimedia content has been used in education applications, e.g. in distance learning, to make learning more intuitive, more interactive and more effective than the traditional presentation formats.

Cognitive architectures include a description of memory stores, memory codes, and cognitive operations. Architectures that are relevant to multimedia learning include Paivio's dual coding theory, Baddeley's working memory model, Engelkamp's multimodal theory, Sweller's cognitive load theory, Mayer's multimedia learning theory, and Nathan's ANIMATE theory.

This paper addresses the issue of how to avoid unproductive multimedia instructional practices and employ more effective cognitive strategies. The article ends with methodological suggestions concerning the important role of interdisciplinary research and assessment methods in this are.