


Chapter 2

Aligning Interactive Multimedia Development Practices With Mayer's Split- Attention Effect Principle

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ABSTRACT

Multimedia learning can be defined as the construction of knowledge based on instructions that are delivered through the combined use of visuals such as text, images, animations, etc. It is best described by Richard Mayer, one of the leading researchers in this area who postulated that people learn better from words and pictures than from words alone. Multimedia instructions have for objectives to enhance and promote meaningful learning. The split-attention effect occurs when multimedia instruction is designed in a way that it requires learners to split their attention between, and mentally integrate multiple sources of information that are separate in temporal or physical dimensions/locations. Mayer's principles are guiding constructs, useful for creating effective interactive multimedia materials. This chapter elaborates and sheds light on how to creatively design or develop multimedia learning materials, which can create constructive knowledge by sustaining good engagement in learning and by overcoming and managing the split-attention problems.

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INTRODUCTION

The introduction of multimedia learning has become a communication tool in education; it has become a new paradigm in education. It has increasingly alerted and created new impact on education by the evolution of new concepts used in content development and by using innovative methods in teaching and learning. Educators' way of teaching as well as the design of instructional materials have changed and evolved with the use of educational technologies. Consequently, using educational tools and other related technologies have helped educators to shape their course contents for better delivery. Multimedia learning provides a good instructional medium for information delivery, and this has helped learners in a way to have better control on their learning. According to Lindstrom theory (1994), multimedia "provides a means to supplement a presenter's efforts to garner attention, increase retention, improve comprehension, and to bring an audience into agreement", which consequently results in people remembering 20% of what they see, 40% of what they see and hear, but about 75% of what they see and hear and do simultaneously.

With multimedia learning, educators can effectively deliver information that is difficult to explain in textual format. Same could be presented in interactive ways using animation or video or using textual information supported by auditory means. Reliance on educational technology has increased since it offers great potential for multimedia instruction. Instructional materials can be designed in such a way where pedagogical strategies are used to help develop the learning potential of students.

Multimedia learning offers great opportunities and diverse ways to facilitate and entertain learning. You have the possibility of using mixing modes, that is, visual and auditory, in creative ways. However, what is important to know is the fact that learner's brains are able to process information using multiple channels, simultaneously. Multimedia learning helps learners to construct knowledge using multiple modes that include both visual and auditory information. It has been proved by Sweller (2003) that learner's ability to process information is a multi-step process that involves the perception, attention, selection, organization, and integration of information.

Consequently, we should not also forget that the promise of the future does not necessarily lie in technology alone, but in people's ability to use, manage, evaluate and understand it. Therefore, depending on the learning styles and knowledge construction capacity, it might be probable that learners are not able to adapt to the panoply of multimedia tools. Each learner has his or her own individual learning preferences.

In this way, it is important for educators to understand and channel the right teaching repertoire according to the students' style. Arslan (2012) quoted that the flexibility and interactivity elements of multimedia may cause confusion and

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