Chapter 13
Interactive Hypermedia-Based Learning Environment:
Models of Making Sense of Dynamic Visualization

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ABSTRACT

Seven students learning art in the 12th grade, experienced for the first time the processes involved in the interpretation of a dynamic performance art in a hypermedia-based learning environment, followed by learning a hypermedia-based curriculum unit concerning this complex skill, and concluding by transferring this acquired knowledge for interpreting a new, different artwork. Cognitive aspects of students' profiles of understanding and models of enactment are described. Interpretation of performance art is highly complex, but is important in current era of visual culture. Generally, this learning environment enabled most students to overcome some of the difficulties involved in this dynamic visualization, but presented them with other difficulties. A careful considerations of these issues as related to the design, by curriculum developers and teachers may yield a successful students' performance.

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PRO AND CONS OF TECHNOLOGY

The use of technology in current formal and informal learning environments is not a rare sight any more. Diverse technologies may constitute powerful cognitive tools for enhancing students' learning of various content domains in numerous ways; they afford students' access to updated local or international, static or dynamic information and data, frequently unavailable in textbooks or schools; enable students' interactions with the information and its active processing; present students with multiple representation-types of same phenomenon thus promoting students' awareness to different emphases or their development of multiple views and cognitive flexibility; it may extend the immediate learning environment beyond its physical borders by providing the means for establishing networks of communication and cooperation, and so forth. However, at the same time, students using technology in the course of learning were found to confront many related difficulties, pointing at the many flaws such use may have; the overwhelming available information may hinder students' ability to deal with it efficiently; the need to integrate diverse representation-types or understand a dynamic phenomenon in order to construct a coherent body of knowledge; the need for cultivating thinking through symbolic systems, and more. It seems that technology alone, although offering many advantages to learning, has to be applied with cautious, accounting for students' characteristics and abilities, the target task at hand or the domain to be studied. An advantage in one situation may become a hinder in another, and vice versa.

Being an important goal of learning visual arts, the purpose of the present chapter is to describe possible implications of our examination of the use of hypertext for promoting students' ability to make meaning and understand social criticism. As noted by Freedman (2003, p. xi):

"The process of learning to make and adequately respond to the complexities of the visual arts is unlikely to occur without guidance. Unless people are given instruction, they may never get beyond the surface of the images and designed objects they see every day. When students develop a deeper understanding of their visual experiences, they can look critically at surface appearances and begin to reflect on the importance of the visual arts in shaping culture, society, and even individual identity."

LEARNING WITH HYPERMEDIA TECHNOLOGY

Hypertext and Hypermedia: Definition as well as Advantages and Limitations

The term "Hypertext" was coined by Theodor H. Nelson in the 1960s, referring to a form of electronic multi-linear or multi-sequential series of text chunks connected by electronic links in an open-ended, reversible mode, having no beginning or end, offering readers different navigational pathways and access to information through several entrances, without any one of them surpassing the rest. The integration of various modalities - visual information, sound, animation and other forms of data - within the hypertext, created an expansion of the hypertext, named "Hypermedia", terms usually used interchangeably (Landaw, 1992).

Hypermedia Advantages

Hypermedia technology is widely use for its many advantages for learning in any domain. These environments allow learners non-linear, on demand access to deep and efficient exploration of large amounts of complex information and multiple-representation learning materials,