Learning in museums: The role of digital media

by Eva Reussner, Knowledge Media Research Center, Tuebingen (Germany)

In this three-year interdisciplinary research project (January/2006 – December/2008), researchers from a museum, a research institute for cognitive and media psychology, and a pedagogical research institute work together to examine learning processes in museum settings that involve the use of digital media. We use a broad definition of learning that includes the acquisition of knowledge as well as the development of new interests and cognitive skills. The main research questions are: How do digital media influence the perception and understanding of exhibits by museum visitors? Which consequences can we expect from contextualizing objects by means of digital media in terms of visitors' behaviors, communications, and cognitive processing?

These questions are pursued in a number of sub-projects that are mainly doctoral dissertations. These cover a range of different media (text, image, interactive and non-interactive video, 3D-visualization, virtual exhibition) provided on integrated screens or computer terminals, but also on mobile devices. The research analyzes various aspects of the learning process: individual prerequisites (previous knowledge, visitor's agenda), the social aspect of museum visiting (individual versus collaborative learning), and learning outcomes (knowledge acquisition, formation of interests, and opinions). The research is theoretically based on psychological and pedagogical models of learning and draws on a broad range of empirical methods combining both field and laboratory studies. As we

integrate the results of the different sub-studies to a more complete picture of visitors' use of and learning from digital media in museums, we hope to derive design principles that can guide museums in their efforts to tap the full learning potential of digital media.

Cooperative research project by
a) Knowledge Media Research Center, Tuebingen, Germany: Friedrich W. Hesse, Stephan Schwan, Carmen Zahn, Daniel Bodemer, Kristin Knipfer, Lars Kobbe, Eva Mayr, Eva Reussner, Joern Toepper, Daniel Wessel
b) Deutsches Museum, Munich, Germany: Helmuth Trischler, Walter Hauser, Cornelia Kemp, Annette Noschka-Roos, Alexandra Donecker, Martina Hänle, Nadine Herrmann
c) Leibniz Institute for Science Education: Manfred Prenzel, Tina Seidel, Katrin Knickmeier, Katrin Schoeps, Mareike Kobarg, Gun-Britt Thoma, Silke Vorst

Project coordinators: Prof. Dr. S. Schwan / Dr. C. Zahn, Knowledge Media Research Center, Tuebingen, Germany

Contact information: Eva M. Reussner, M.A., c/o Knowledge Media Research Center, Tuebingen, Konrad-Adenauer-Str. 40, D-72072 Tuebingen, Germany, e.reussner(at)iwm-kmrc.de