

Museum Studies of Memory: Selected Abstracts

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The following abstracts illustrate some of the museum studies that have more or less focused on memory. Although memory is involved with any study that measures knowledge, these studies were selected because they explicitly dealt with memory.

Dobra, D. (1929). Effect of Printed Information on Memory for Pictures. *Museum News*, September, 6-8.

This study assessed the amount of recall when prompted with the use of post card pictures of paintings from the Art Institute of Chicago. The amount of information was controlled by varying the amount of information on labels. One group was given 15 seconds to study the pictures and another 30 seconds. Recall of pictures was better when 30 seconds study time was given. In addition, with one exception, recall was better when only the name of the picture was given. Increasing label information was associated with fewer pictures being remembered. The exception: recall was higher (for the 30 second group) when specific information about the painter was given.

Shettel, H. (1967; 1968). *Atoms in Action Demonstration Center impact studies: Dublin, Ireland and Ankara, Turkey..* Report No. AIR-F58-11/67-FR). Washington, DC: American Institutes for Research.

The initial study showed a small but significant gain in knowledge about the peaceful uses of atomic energy and a positive change in attitudes toward the USA as a supporter of peaceful applications of atomic energy. A six-month follow up survey in Dublin, Ireland, found that those who viewed the exhibit had forgotten some of the information learned at the exhibit, but their attitudes remained the same.

Lakota, R. (1975). *The National Museum of Natural History as a Behavioral Environment. Part 1, Book 1.* Washington, DC: Smithsonian Institution Office of Museum Programs.

Lakota used a picture recognition sorting task as a measure of exhibit hall effectiveness. Visitors were given a set of photographs and asked to sort them into a pile of those they recognized and another pile of those they did not. Lakota divided these groups into those containing adult peers and those containing adults with children. Adult peer groups recognized only 40% of the photographs while adult-child groups correctly classified 68.7%. Since memory decreases with increasing amounts of information, this difference was probably due to the fact that adult peer groups visited more

exhibit halls (12) than adult-child groups (8). Errors for both groups were primarily of inclusion (i.e., including photographs of halls not actually visited).

Barnard, W., Loomis, R., & Cross, H. (1980). Assessment of Visual Recall and Recognition Learning in a Museum Environment. *Bulletin of the Psychonomic Society*, 16(4), 311-313.

Researchers had university students visit a history exhibition and measured visual recall and recognition at a later time. Memory was better when participants viewed fewer exhibits.

Barnard, W. (1981). *Labeling and Modality Effects in Visual Learning of Museum Stimuli.* Ph. D. dissertation, Ft. Collins, CO: Colorado State University.

This study tested the effects of auditory labeling and information modality (text versus auditory) on visual learning of museum objects presented on a videotape.

Falk, J. (1988). Museum Recollections. In Bitgood et al, *Visitor Studies - 1988: Theory, Research, and Practice.* Jacksonville, AL: Center for Social Design. Pp. 60-65.

The author interviewed 11 individuals (friends, relatives, people on airplanes) asking them to recollect a museum experience. The interview questions invoked episodic memories ("Who did you go to the museum with?" "What time of year was it?"). Falk described the recollections in terms of context, time, exhibits, and architecture noting similarities among respondents.

Falk, J. & Dierking, L. (1990). The Effect of Visitation Frequency on Long-Term Recollection. In S. Bitgood, A. Benefield, & d. Patterson (eds.), *Visitor Studies: Theory, Research, and Practice, Volume 3.* Jacksonville, AL: Center for Social Design.

Falk and Dierking measured recollections of first or very early museum visits in a group of 12 museum professionals. Seven of the participants reported that they were frequent museum goers as children. Frequent visitors tended to visit as part of a family group, infrequent visitors as part of a school group. Infrequent visitors were more likely than frequent ones to describe the exhibits in detail. Memories were primarily of the episodic and visual type, very little semantic memory was reported.

Stevenson, J. (1992). The Long-term Impact of Interactive Exhibits. *International Journal of Science Education*, 13(5), 521-531.

Stevenson studied family visitors to the Science Museum (London). Memories of the visit at a six month follow-up interview were classified as: spontaneous (27%); prompted by photographs (61%); prompted by comments of another family member (13%); 17% of exhibits in the Museum were not remembered by someone in the group. Of personal memories, 60% were descriptions of exhibits, 26% were thoughts about and reflections on the science or technology

behind an exhibit, and 14% were about the emotional feelings attached to seeing and using an exhibit. Stevenson concluded that most memories of the visit were descriptive and episodic in nature. Discussion with family members after the visit may aid in the retention and formation of memories.

Cota, A. & Bitgood, S. (1993). Recall of label content. *Visitor Behavior*. 8(4), 12-13.

This study compared recall of single and double paragraph passages. It was found that respondents recalled a lower proportion of information when they read long passages than they did when they read short passages.

McManus, P. (1994). Memories as Indicators of the Impact of Museum Visits. *Museum Management and Curatorship*, 12, 367-380.

McManus, in a memory study of an art museum exhibition, found that a follow-up, mail-back survey produced primarily visual and episodic memories (i.e., objects or things, events such as playing with a mask). No semantic memory (conceptual, factual) was found.

Ellis, J., Koran, J., Camp, B., & Koran, M. (1994). *Learning From Museum Exhibits: The Influence of Sequence and Perspective Taking Instructions*. Technical Report 1. Gainesville, FL: University of Florida Museum of Natural History.

This study examined the effects of sequence of viewing individual displays and perspective-taking instructions. Sequencing was controlled by giving individuals specific instructions about which order to view exhibits. Perspective-taking instructions had individuals take the role of a biologist, a geologist, or no perspective when viewing the exhibits. Both sequence of viewing and perspective-taking instructions were found to influence knowledge acquisition as measured by a multiple-test of knowledge.

The Museum Exhibit as a Visual Learning Medium

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A museum exhibit provides the opportunity for visitors to acquire vast quantities of information in various forms. Determining the form and content of the information to be assessed is an essential first step to evaluating the effectiveness of the exhibit as a learning medium. With reference to

the information to be gained from a museum exhibit, two forms of learning are likely to be of greatest importance: *conceptual* and *visual*. These two forms of learning differ in the nature of the information retained in memory.

Conceptual learning is represented by the retention of factual information about both abstract ideas and concrete environmental characteristics. This form of learning from exhibits reflects the facts visitors learn about the exhibit topic or theme. The most important basis for the conceptual learning that may take place from exhibits is the accompanying narration. Therefore, conclusions from conceptual learning evaluations will depend to a large extent on the effectiveness of narrative information.

In contrast, visual learning refers to the visitor's memory of the visual features of the exhibits such as the objects within exhibits, textures, colors, various dimensions of shape and relationships among objects. Evaluations of visual learning can be useful for determining the effectiveness of various physical design characteristics of exhibits. Since museum exhibits provide the opportunity to become familiar with realistic features of exhibited artifacts, visual learning represents a potentially unique contribution to visitor learning that would otherwise be unobtainable. A series of research studies was conducted which addressed three basic questions concerning the evaluation of visual learning from exhibits.

First, was it possible to determine how well people remember specific items that they had previously seen in exhibit collections? Two different assessment procedures were compared for measuring visual learning: free recall and recognition tests. This provided the opportunity to determine their feasibility as measures of visual learning as well as their practicality for use in museum evaluation projects. The recall technique involves asking an individual to list previously observed physical stimuli within a specified domain, such as artifacts displayed in museum exhibits. The percent of correctly recalled items is interpreted as an indication of stored visual information. The recognition procedure involves presenting individuals with some stimuli that are identical to the originally seen. The subject is asked to indicate if each stimulus was present in the exhibit (s) or not. The degree to which subjects correctly identify previously observed stimuli presumably reflects the amount of visual information stored in memory.

The second question concerned the effect on visual learning of the number of items presented. If size of collections (number of items displayed) is found to influence the ability to remember the contents of exhibits, then further exploration would be warranted to determine if any optimal number of exhibited items would serve to maximize visual learning.

The third question dealt with the potential relationship of the amount of time spent viewing objects and the retention of visual information. Since viewing time (exhibit holding power) has been determined to have a positive relationship to the acquisition and retention of conceptual information about