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AUTHOR Du Terroil, Anna
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ABSTRACT

The role of museums in educational programs is described in this study and literature review. It collects, describes, and evaluates the museum's acceptance, use, and impact of psychological learning theories within educational programs. The study reports that most museums can give only a portion of their time, space, and imagination to educational programs. Throughout the literature review, a number of guiding principles point out psychological learning theories which museums use to provide exceptional learning experiences within their own institutions. The guiding principles which museums use include (1) the recognition of relevancy between museum visits and school experiences; (2) the use of visual objects as perceptual materials to reinforce learning; (3) the promotion of activity, discovery, and inquiry as useful techniques in developing and refining discriminatory skills; (4) the acceptance and utilization of organized experiences which facilitate learning and retrieval; and (5) the recognition of the value of stimuli and feedback as part of an exhibit to enable visitors to respond and attend to the exhibit as a learning experience. (Author/JR)

MUSEUM EDUCATION: RECENT TRENDS IN LEARNING ENVIRONMENTS

Anna Du Terroil
U. T. S. A.

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I. Introduction

The basic principle which a researcher must determine when considering a museum study is the role of the museum in a democratic society. In the case of this investigation, the museum's educational function, namely its organized educational programs will be considered as one of the most vital aspects in which the museum can best fulfill its role in popular education. The purpose of this study will be to collect, describe, and evaluate the museum's acceptance and use of psychological learning theories within their own educational programs. For, museums are continually in the process of developing educational programs which will give rise to intellectually stimulating museum visits, increased return visits, greater appreciation of the museum's role as an educational experience, and improved relations between the museum and the community.

Leonard Carmichael has clarified the relationship between the museum and the community it serves by explaining that, "In the broadest concept of education, the museum has an essential role to play in the transmission to each new generation of all that is meant by civilization." (Deighton, 1971, p.422) In a strict sense, this cultural transmission focuses on visual

education, for the objects preserved within it are the tangible evidence of man's history, of his creativity, and of the physical aspects of the world he inhabits. But an object's worth can be measured not only by its beauty, but also in proportion to its use. To extend the usefulness of these collected objects to the society which is supporting the institution, then becomes a primary goal of the museum, and, by extension, one of the guiding objectives of its educational services.

As a graduate student who had completed three field study projects in a museum, this writer had an opportunity to observe the museum's educational program which reached the greatest number of visitors, namely students. It became quite clear that most museums can give only a portion of their time, space, and imagination to educational programs, and the important consideration of this investigation is the realization that if an educational program has to be brief, it had better be good. Since the museum has maintained its image of scholarly conservatism, it is of considerable value to survey educational literature in order to determine what impact the psychological learning theories of the last fifteen years have made on museum education.

It should be pointed out that within the museum, there are two main target groups involved in instruction, docent guides and teacher guides. A docent guide is a non-paid

individual who completes a training program within the museum and is then allowed to conduct tours for visitors. A teacher guide is the individual who is the regular teacher of a visiting group of students and who may or may not have special academic training regarding the specific exhibits to be toured. Therefore, this study will focus on the various types of treatments advocated by museums and carried out by the guides in order to implement the educational services.

Another indispensable service of the museum is its outreach program to the community schools. The association which the museum attempts to establish with its own area schools will also be analyzed in terms of specific facilities and services offered.

II. Literature

Today educational psychologists stress the importance of verbalization and perceptual skills. Visual aids are a means of helping children to see continuity, relationships, usefulness and enjoyment in the subjects they study. In this case, museums are a most unique source of visual education. They offer contact with authentic, three-dimensional objects and offer students an opportunity to practice and/or further refine their perceptual skills. (Wittlin, 1949) The object itself provides a strong stimulation to the learner's sense organs and facilitates the focusing of attention so that learning may follow. (Morris, 1973) The use of concrete

materials and their relationship to the psychology of learning, apply particularly to the meaningful performance of "verbalization," in that the use of the three-dimensional object, in conjunction with verbal coding, should facilitate comprehension and assimilation of the information experienced during a museum visit.

Alma S. Wittlin (Larrabee, 1968) has pointed out that in a museum, attention is not enforced, or reinforced, by extraneous rewards in the form of grades or credits, or by potential success in a competitive game. The reward can only be an intrinsic part of the experience itself. Smith (1971, p. 201) also comments on internal rewards, "...if one learns in a certain way under conditions that are reasonably interesting, challenging, and rewarding, then one learns to like to learn under similar conditions and to learn in general." Wittlin then proceeds to describe exhibits which would provide the necessary stimuli to alert and hold the attention of the viewer by providing stimuli in the form of novelty, complexity, visual appeal, and inquiry by posing challenging questions to the viewer. Psychologists have determined that novelty provides a strong stimulus to the learner and, in conjunction with complexity, which presents greater information, the learner is more likely to attend for a longer period of time, to the information being presented. (Travers, 1972, pp. 237-238) Accordingly then, museum exhibits should be planned systematically because the degree of the organization or structure of a communi-

cation is an index of the amount of information it supplies. In examining an exhibit, the viewer is sorting out impressions and the communication which is most systematized has the best chances of being received, recorded by the mind, and of remaining retrievable. In these explanatory comments, Wittlin has made reference to numerous psychological learning theories and if these guidelines are pursued by exhibit organizers, then the quality of the learning experience afforded by the exhibit would be greatly enhanced.

In the early sixties, Museum News explored the subject of the "widening gap" in the relationship between museum, the public school, the university and the community. (Reese, 1962) Apparently, this relationship was a concern of many persons in the museum field, and a series of articles related to this problem were published, not only in Museum News, but in educational journals throughout the sixties.

Two research studies (Barton, 1974) (Mason, 1974) which dealt with determining museum needs by recording attendance and type of visitor, clearly concluded that the largest percentage of visitors was students of various age levels. The assessment made by these two studies (the importance of fulfilling student needs) is clearly reflected in five other studies which directed attention to improving the school-museum relationship by promoting the use of the museum for teaching purposes. (Hamilton, 1974) (Hayes, 1967) (Kirk, 1964) (Rebetez, 1970) (Reese, 1962) The Hayes report, the only broad survey,

reflected some important negative conclusions from interviews with fifty-seven different art museum officials. In general, the school visitors were, at best, tolerated, few exhibits were especially designed for school use, and the regular teacher-guide was too ill-trained to provide an effective tour.

Recently, two studies have concentrated on measuring the quality of the museum visit itself, with emphasis on guided tour techniques. (Chen, 1974) (Rabinowitz, 1973) The Chen study was a well-controlled experimental design, using observation techniques in order to understand better the nature of children's experiences in different museum settings. The Rabinowitz study investigated the use of new educational techniques which apply to museum teaching (by docents), such as an interdisciplinary approach, open classrooms, community and career oriented education, and thematic and conceptual approaches for tours. During tours emphasis was placed on stimulating the group's own inquiry and a belief in the active involvement of children in the learning process later resulted in farming, textile, and cooking studios. Activity centered behavior is in keeping with Piaget's beliefs that "...children's ability to deal with the broad concepts of space, time, matter and causality depends on learning that develops slowly from the children's direct sensory experiences." (Victor, 1974, p. 25) Jerome Bruner also promotes inquiry learning and lists four major benefits; it enables children to learn a variety of

problem-solving techniques; the learning itself becomes self-rewarding; transfer of the inquiry technique can apply to many new tasks; and it is an aid to memory processing. (Victor, 1974)

In the past, however, museums have conducted comprehensive research programs designed to discover methods for making museums of all kinds into more effective educational centers. Three such museums were the Buffalo Museum of Science, the Milwaukee Public Museum, and the Cleveland Museum of Art. These studies, (Melton, 1936) (Bloomberg, 1929) and (Screven, 1970) reflect the realization that the museum has a unique contribution to make, and investigate the ways in which this contribution can be most fully realized.

The Melton study (1936) considered three methods of instruction for visiting student groups. The customary procedure was to use an illustrated lecture with the museum exhibits as the illustrative material, and a docent lecturing on each exhibit. One variation from this technique was the use of game cards with questions in place of docent lectures in which the students could discover the answers merely by looking at the exhibits or by reading some of the exhibit labels. A second variation was a technique called "discussion," in which the docent posed a leading question regarding the exhibit to create an active attitude toward the exhibit. Of these three methods, the game card technique resulted in highly motivated investigation on the part of the students, in directing attention of the students toward pertinent

facts and relationships, and in making maximum use of the visual materials. According to Ellis (1969, p. 71) the transfer of learning is facilitated by labeling or identifying the important features of a task. These guidelines help the learner distinguish the important features of the task, but, at the same time reduce the level of incidental learning. (Travers, 1972, p. 254)

There were also two other important variations in the study. During the first part of the investigation, the students attended the museum without having had any preparation in the schools, except for a brief thirty minute lecture at the museum before the tour. Later in the study, the students were given preparation, a reading lesson with illustrative material and a test, usually one day before the museum visit. After the tours, the principal ideas presented during the visit were summarized in an illustrated lecture, for on the basis of educational learning evidence at the time, it was known that some form of explicit review aided in fixating and prolonging the effects of the museum visit, which was measured and further fixated by the use of information tests. In summary, then, this investigation reflected that the combination of procedures which brought about maximum learning was the game card technique before which students would have had a preparatory lesson at their respective schools, and then a summary lecture to focus on principal ideas considered during the tour. These procedures reflect numerous

educational learning theories, the activity-oriented method preferred by Piaget, the preparation of the learner by providing a framework of information on which to attach new visual information, and a review of the principles of the presentation which enabled the learner to again concentrate on the most general and most relevant aspects of the tour.

The Bloomberg study (1929) used combinations of numerous techniques: teacher-presentation of all material, questions and investigation, introduction to gallery experience by slides and lecture, and schoolroom preparation before the museum visit. Suggestions offered by this investigation were the need to use: less instruction on the part of the teacher and more investigation on the part of the students---increased motivation and active participation on the part of the students to stimulate learning---preparation in the school room before the museum visit which the investigator related to the laws of preservation (the tendency of a certain quality of nerve tissue to hold impressions automatically much longer than others) for children of high intelligence who scored unusually high on delayed recall tests. The investigator also correlated the remarkable recall scores as an indication of the value of the use of visual instruction at the museum. In general, then, Bloomberg achieved more significant results when the students were allowed to investigate and discover on their own, with little teacher interference---when they were motivated and stimulated to search for infor-

mation---and when they were prepared before the museum visit with a lesson at school. Apparently the fact that the museum visit directly related to previously learned material added to its significance and Garry (1970, p. 408) has indicated that retention is aided by the meaningfulness of the material learned and the degree to which it is related to earlier learning. This preparatory lesson apparently provided a set of cues which were later used by the visitor during the tour; it helped organize and structure the information.

In the Milwaukee Public Museum study, Screven (1970) acknowledged that most museum displays are designed to reflect scholarly accuracy, but with little attention to whether visitors respond to displays in ways that are related to their instructional objectives. Furthermore, the exhibits are put together without specific learning outcomes in mind, without a definition of communication objectives or ways of measuring visitor performance. Screven specifically refers to suggestions by Skinner, Glaser and Reynolds to correct these deficiencies through the use of programmed instruction principles, interactive electronic devices and automated testing devices to help the visitor utilize the potentials of the museum as an open, free-access learning environment. In the investigation, the museum used exhibits with a punchboard to answer programmed questions coordinated with an audio cassette, exhibits with no-feedback pretests and without supportive aids, and exhibits with no pre-test nor

supportive aids to provide guidelines for studying the exhibit. Results on post-tests indicated that the audio with punchboard was most effective in facilitating recall, even the no-feedback pre-tests were productive in that cues were provided for visitor investigation, and finally, the exhibit without any structured guidelines produced the least learning. All of these methods and techniques support learning principles which emphasize the use of organized cues around which the learner can cluster new information, as well as the use of providing correct answers as reinforcement during the learning procedure. Mathis (1970, p. 122) has explained that the critical variable in learning may be the amount of time spent in learning. In this case, motivation or stimulation helps, but the actual manipulation of the machine for programmed instruction may itself be rewarding, and may keep the learner at the machine for a longer time than might normally be devoted, in the museum's case, to reading labels.

Three other informal articles dealing with learning techniques in the museum, (Wood, 1974). (Fialkoff, 1974) (McGlathery, 1973) further emphasized the use of active, investigative learning procedures with visiting school groups. Wood's recommendation was to extend the museum's educational function by establishing an art resource center within the institution where children and adults were encouraged to actively involve themselves and experiment by means of six art processes. The art processes, with the cooperation of

the area schools, were integrated into the school curriculum and linked to the museum experiences. Garry (1970 p. 252) has emphasized that if the learner sees purpose in and has knowledge of the value of the task, more will be learned because a high level of motivation is established, for inability to see value in learning tasks unfavorably affects children's efforts to learn.

Fialkoff suggested using a strategy (guidebook) which would lead visiting students to focus attention upon relevant exhibits, to discriminate the details of those exhibits, and to organize their experiences into big ideas which should be transferable to other museum exhibits. The learning procedure involved preparation of the guidebook by the teacher and then assisting the students during their active investigation at the museum. Use of this type of "guidebook" reflects an important psychological learning principle that "organization appears to be crucial in the transfer of information from short-term to the long-term memory system;" furthermore, organizing material before presentation saves the learner the time-consuming process of sorting and arranging the information and may make it possible for the information to enter directly into the long-term memory system. (Travers, 1972, p. 140)

Finally, the McGlathery article emphasized the museum visit as a relevant extension of the students' school experiences, which should be prepared for by the individual tea-

chers by familiarizing themselves with the museum's exhibits, planning a set of organized questions to aid the students' inquiry, and later providing a follow-up lesson which would draw on the museum experiences. Travers (1972, p. 183) has cautioned that, "...acquired knowledge tends to be most readily available to the person who has learned it in the situation in which it was acquired." Therefore, provision should be made so that this knowledge will be used in a variety of situations; in this case, the museum field trip "...can help to prevent knowledge and its uses from becoming tied to particular situations." (Travers, 1972, p. 183)

In these three cases, the recommendations were to provide organized guidelines for visiting groups, as well as learning experiences in which the students were not just simply listening to information, but actively involved in visually scanning and discriminating the information presented in the exhibits. Gerhard (1971, p. 19) points out that "learning is a search for meaning," and that one learns by processing information, by analyzing, by generalizing and by classifying. Furthermore, "thoughtful learning experiences" are important in developing the learner's thinking ability and this skill has important long range effects in terms of recall and future use for problem solving.

Regarding community out-reach programs, museums in the Detroit area have expanded their educational functions to include extensive loan services in the form of circulating

collections, distribution of publications, television shows, and tours or programs within the museum galleries. (Young, 1962) This interest in establishing a working relationship with area schools is further attested to by two additional articles, (Kirk, 1964) (Mayer, 1974) which concluded that coordination between museum education and the public schools was essential in order to derive the maximum benefit from the museum learning experiences.

III. Conclusion

Throughout this literature review, there surface a number of guiding principles related to psychological learning theories which museums have utilized to provide exceptional learning experiences within their own institutions.

1. The recognition of relevancy between museum visits and school experiences.
2. The use of visual objects as perceptual materials to reinforce learning.
3. The promotion of activity, discovery, and inquiry as useful techniques in developing and refining discriminatory skills.
4. The acceptance and utilization of organized experiences which facilitate learning and retrieval.
5. The use of reinforcement by offering pre-visit lessons and post-visit summaries and related school experiences.
6. The recognition of the value of stimuli and feedback as part of an exhibit to enable visitors to respond and attend to the exhibit as a learning experience.

The evidence reflected in this investigation indicates that, at least, in numerous isolated instances, and, during certain years, these types of learning procedures were, indeed, utilized by museums. Except for the Hayes study (1967), no recent survey exists which characterizes present educational trends in museums. In fact, there is no indication to what degree any of these successful learning procedures are being incorporated into museum educational programs throughout the nation. Many museum visitors still conceptualize museum experiences as passive, lacking in stimulation, and uninformative, except for brief labeling. This reflection of elitism still exists in many museums that cater to the scholarly specialist, the person who already comprehends the significance of the objects exhibited within the museum. For the general public, however, the object without effective communication will fail to generate a high level of curiosity, investigation or learning. During the last ten years, there has been a positive indication that museologists are gradually recognizing the education department as one of the museum's strongest ties to the community. Although the education department may not support itself financially, and drains funds from other programs, the dilemma is not easily resolved. But the museum cannot exist as an island, some bridge must be found to the community from which it receives its major support, and what better bridge than to provide meaningful educational experiences for the greatest number of visitors: the community's students.

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