

BOOK REVIEW from *CURATOR: The Museum Journal*, 41/4, December 1998, pp. 285-290

Learning in the Museum

by George E. Hein

New York, NY: Routledge. 1998. 203 pages. Hard cover, \$85; Soft cover; \$25.99

Museums: Places of Learning

by George E. Hein and Mary Alexander

Washington, DC: American Association of Museums Education Committee. 1998. 54 pages. Soft cover; \$9.50

Reviewed by Ted Ansbacher, principal, Science Services, White Plains, NY

The practice and study of museum education—what and how people learn from their visits—important as it is recognized to be, has been hampered by confusion over the use of key words, disagreement about appropriate goals and outcomes, and lack of an underlying educational theory. Among those working to improve this situation, George Hein, a professor at Lesley College, Cambridge, Massachusetts, has been a leading contributor. So the appearance of his book, *Learning in Museums*, and a monograph, based largely on the book and co-authored with Mary Alexander, *Museums: Places of Learning*, is greeted with high expectations.

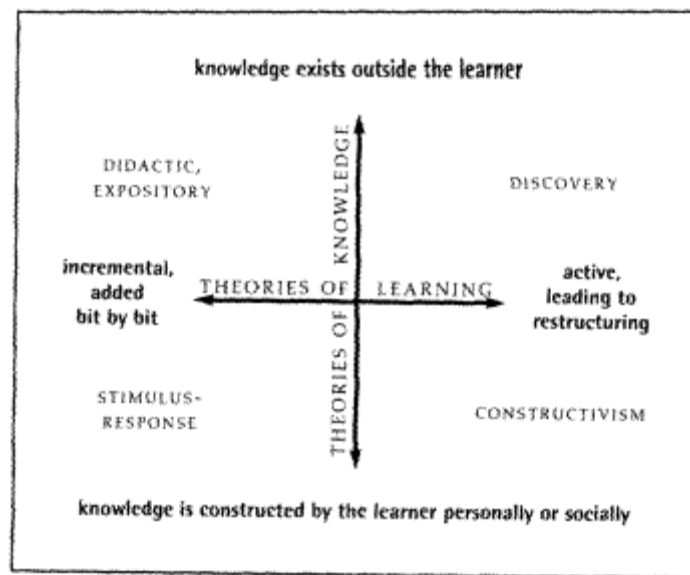
The book, aimed at museum professionals, organizes and extends Hein's work on educational theory, theory and practice of visitor studies, and the application of constructivist ideas to museums. The monograph was produced in response to a request for proposals from American Association of Museum's Standing Professional Committee on Education (EdCOM) to produce "a monograph that would provide museum personnel with a straightforward, concise, credible survey articulating the educational contributions of museums within the wider educational issues of society." Hein, already underway with his book, was selected for the project along with co-author Mary Alexander. The resulting publication can be recognized as an edited version of chapters from the book dealing with the results of visitor studies, the analysis of educational theories, and the pedagogies that follow from those theories.

Both *Learning in Museums* and *Museums: Places for Learning* will be useful for museum staff who are grappling with the theoretical underpinnings of their enterprise and striving to make exhibits and programs better learning experiences. While the monograph may serve as an introduction, most of this audience will benefit more from the book, which goes considerably farther in reviewing visitor studies—their history, practice, and theory—and in advocating constructivist principles. However, while both the book and monograph describe the conditions that may lead to learning, neither one actually presents the learning itself—the outcomes, in all their variety, of a museum experience. In missing this goal set by EdCOM, the monograph will be of limited use in convincing those who are skeptical of the educational value of museums.

EDUCATIONAL THEORY

The foundation of Hein's discussion of learning in museums, and one of the significant contributions of the book, is his analysis of educational theory. He first presented these ideas in 1995, and here he expands on them and their bearing on museum research methods and education practice. Hein classifies educational theories based on three components: a theory of *knowledge* (epistemology), a theory of *learning*, and, deriving from the first two, a theory of *teaching* (pedagogy).

He places theories of knowledge on a continuum ranging from the realist position, that the real world and knowledge of it exist independent of the mind, to the idealist position, that knowledge exists only as constructed by the individual mind. Theories of how people learn also are spread along a continuum. At one end is the position that learning occurs by adding information bit by bit to an essentially passive mind. At the other extreme learning is seen as an active mental process resulting in a restructuring of the mind. These two parameters are essentially the *what* and *how* of learning. By drawing a diagram with these two continuums at right angles, Hein forms four quadrants, each representing a pair of positions with respect to learning and knowledge that characterizes a particular educational theory. He labels the theories as *didactic*, *expository*; *stimulus-response*; *discovery*; and *constructivism*, and for each he also describes what would be the most appropriate pedagogy. (See diagram)



By this analysis, constructivism is defined as the educational theory that embraces knowledge as a construction of the mind and learning as an active restructuring of the mind. It is neither an epistemology nor a theory of learning by itself, as it is sometimes characterized. The diagram of educational theories also makes another important point. Since the axes are continuums, each quadrant encompasses a range of positions, and there are no sharp boundaries between educational theories. It is not necessary to take the extreme either/or positions which polarize many discussions of museum education.

Hein's analysis is a welcome step towards establishing a theoretical base for museum education. It points the way to a much-needed sorting out of ideas and terms and provides a useful framework for further discussion. However, his choice of *epistemology* for the "what" parameter of learning seems to leave out some considerations important for museum education and to limit the diagram's applicability. Both the book and monograph make it clear that "learning" in museums has to include learning of all kinds—changes in an individual's knowledge, skills, attitudes, beliefs, feelings, and concepts. Epistemology, however, seems to apply only to the traditional knowledge part of this spectrum.

A reason that Hein uses epistemology is, as he says, that "teaching styles and the organization of material to be taught require different methods for some epistemologies than for others." But the connection of epistemology to teaching styles is not obvious—at least not to this reviewer. Why, for example, would epistemological status affect the way one taught Newtonian mechanics? A more general statement would be, "Teaching styles and the organization of material

to be taught require different methods for some *learning goals* than for others.” This would encompass goals from any part of the learning spectrum—knowledge, skills, or feelings—each of which could still be paired with a theory of learning to fill out a complete educational theory.

RESEARCH AND EVALUATION

Nearly half of *Learning in Museums* is devoted to a discussion of visitor studies, not as a “how to” manual, but as an examination of museum research and evaluation in relation to educational theory. Hein starts with a review of early visitor studies, from 1900 to 1950, and finds enduring contributions from them in establishing such basic measurements as *attracting power* and *holding power*. And he notes two qualitatively different approaches to the studies that foreshadow the two major approaches of today.

From the ‘60s to the present, visitor studies saw a sustained growth, and here again Hein takes a comprehensive look at what has been done, particularly in examining the differences between *experimental-design* studies and *naturalistic* ones. Experimental-design studies, patterned after work in educational psychology, compare a particular measurement before and after the experience under study, holding all other variables as constant as possible. The goal is to produce results with scientific reliability. Words like quantitative, atomistic, objective, and laboratory model are used to describe these studies. Naturalistic studies, on the other hand, taking their cues from sociology and anthropology, stress the importance of context and are better able to deal with complex situations. Words like qualitative, holistic, subjective, and real-world based are used to describe these studies. At the expense of scientific reliability, naturalistic studies may produce results that relate more closely to actual museum practice.

To further clarify these positions, Hein introduces two helpful metaphors. Didactic education and experimental-design research both fit the *ladder* metaphor; a ladder being a hierarchical structure which has one sequence of steps that must be followed to get from any one place to another. In contrast, constructivist education and naturalistic methods are better described by the *network* metaphor. In a network, or web, the various parts are interconnected and there are many paths from any one point to another. Of the two, Hein advocates the network as being the appropriate metaphor for museum education, finding the behavioral objectives that go along with the ladder-model theories to be too restrictive. But he also recognizes that “theoretical purity does not necessarily translate into coherent practice,” or, in other words, most of us are going to be eclectic in the way we actually teach or develop exhibits and programs.

Hein notes that “supporters of didactic and constructivist education, or supporters of experimental-design and naturalistic evaluation ... have fundamentally contrasting views of the way the world is organized ... [and] their debates take on a harsher tone: the participants simply talk past each other.” This does seem to characterize many discussions of museum education, but there is hope that Hein’s discussion here may at least lead to more productive dialog between the two camps.

There are surprisingly few methods for visitor studies, and Hein reviews them with a particular eye to how they match with the different approaches to research and evaluation. Starting with the important reminder that all visitor studies must begin with what people actually *do* and *say* at the museum, he then goes on to group the methods into three broad categories:

- 1) Observation methods including tracking and timing and the use visual tools—still and movie or video cameras.
- 2) Language-based methods including questionnaires, pre- and post-tests, using drawings and floor plans, and interviews and focus groups.
- 3) Assorted other methods such as listening to visitors’ conversations, examining wear on exhibit components or on the floor.

EVIDENCE FOR LEARNING

The chapters “Evidence for learning in the museum” in *Learning in the Museum* and “Museum Visitor Research” in *Museums: Places of Learning* review the results of visitor studies that bear on museum learning. Although organized differently, the two chapters present basically similar review of the literature, grouping the results in three main categories:

- 1) Creating an environment conducive to learning, which includes visitor’s physical and psychological comfort, use of advanced organizers, and attention to ergonomics;
- 2) Making exhibitions better, which includes exhibit labels and interactive exhibit elements.
- 3) Knowing and meeting audience needs of children, adults, families, and groups.

This compendium of ways to improve exhibits and programs should prove useful, either as an introduction for newcomers to museum studies or as a review for those who already familiar with them. But contrary to the promise of the chapter title, very little *evidence* for learning is presented. Reporting those things that studies have shown to *improve* learning is not the same as documenting what learning actually occurred. For example, one finding is that “comfort is a necessary, although not sufficient, element for learning in museums.” Perhaps the original sources specify what the evidence was and what specific learning took place, but it is not reported here.

Neither book nor monograph, moreover, is free from misunderstandings that can arise from the too-general use of the term “learning.” Learning in a museum has been acknowledged to be broad—any “change in an individual’s knowledge, skills, attitudes, beliefs, feelings, and concepts.” Confusion arises because “learning” is used sometimes in this all-inclusive sense and at other times in one of the more specific meanings. For example, a list is given from one source of “what people learn as a consequence of museum experiences,” and it is clear from the attributes listed that learning is meant in the broadest sense. One page later, another source is quoted as saying “a successful museum experience that leads to learning includes six factors.” The factors in this list imply the more narrow meaning of acquiring knowledge. Hein is mindful of different meanings for learning, saying “... what we ‘know’ about visitors’ learning is determined by our choices among possible definitions of learning ...,” yet the single term “learning” is used throughout the book, as it commonly is throughout the profession.

In using the single term, both the book and monograph sidestep a major issue surrounding museum education, namely: how much learning, *in a traditional sense*, takes place in museums. The monograph states, “Without question, museums are places of learning,” and Hein further asserts that “whether learning is narrowly defined as absorbing specific pedagogic messages ... or more broadly defined ... there can be no doubt that visitors ‘learn’ in museums.” Yet he also reports, “Museums are not efficient places for traditional ‘school’ education, learning specific facts and concepts ...,” and that “...visitors learn very little of the ‘content’ of exhibitions, a frequent outcome from assessments of museum educational programs using behavioral objectives ...maybe it’s the wrong outcome to expect of a museum visit.”

Museum educators may continue to argue this, but it becomes an issue because many people, both outside and inside museums, hear the term “learning” *only* in its traditional sense of gaining knowledge or skills. Perhaps museums are being disingenuous in using these words, knowing that the outside world hears them in a way which does not describe what we are really doing. Or perhaps we want the cachet (and funding) that attaches to “education” and “learning,” only to say, when confronted, “well, that’s not really what *we* meant by learning.” Much of this misunderstanding might be removed if museums did not simply claim “learning,” but talked about the specific outcomes of a museum experience and demonstrated their educational value, both in themselves and in *support* of traditional educational goals.

CONSTRUCTIVIST THEORY

Hein is a strong advocate for the constructivist theory, and in the concluding chapter of *Learning in the Museum* he describes characteristics of what he calls *the constructivist museum*—a museum that puts this theory into practice. He proposes three basic questions such an institution would need to address:

- 1) What is done to acknowledge that knowledge is constructed in the mind of the learner?
- 2) How is learning itself made active? What is done to engage the visitor?
- 3) How is the situation designed to make it accessible—physically, socially, and intellectually—to the visitor.”

Hein’s own answers produce a list of attributes for the constructivist museum that include assuring that visitors can make connections to the familiar; accommodating different learning modalities; providing resources beyond the exhibit; collaborating with other institutions to expand the visitor’s opportunities; encouraging social interaction; making sure that exhibits are appropriate for the developmental level of the visitors; providing intellectual challenge; and having staff members who both acknowledge their own construction of meaning in the development of exhibits and continually seek to improve their effectiveness through visitor studies.

Constructivism—what it is and how it is applied—is a thread running throughout *Learning in the Museum*, and yet, after all, there remains some vagueness about its meaning. In its broadest interpretation, the term refers to any active model of learning or, in other words, almost any educational approach other than rote memorization. Another way of putting this would be that constructivism recognizes that knowledge *with understanding* cannot be delivered whole into people’s minds; each person has to wrestle with it, chew on it, and actively fit it into his or her own mind.

In the most specific definition given by Hein, constructivism is an educational theory that embraces learning as an active process and knowledge as a construction of the mind. He enlarges on what that means in practice: “Constructivist learning situations require learners to use both their hands and minds to interact with the world: to manipulate, to experiment, to reach conclusions, to increase their understanding about the phenomena with which they are engaged. Constructivism also postulates that conclusions reached by the learner are not validated by some external standard of truth but only within the experience of the learner.” But this still leaves room for interpretation.

Two key phrases that are used in describing constructivist learning are that visitors “construct their own knowledge” and “make their own meaning” from the museum experience. These are often used interchangeably in the book, although they are open to somewhat different interpretations. *Making meaning* of one’s experience seems close to developing an *understanding* of it. This also can include, as I interpret it, “making meaning” of the knowledge that others have already constructed; that is, developing understanding of knowledge in the traditional sense.

Constructing knowledge, the essential core of constructivism, implies a more formal development of principles and explanations of phenomena. There seems no doubt that this process takes place within individuals, even if in many cases the new knowledge is not verbalized. But what does it really mean to “construct” knowledge? Critics of constructivism often interpret this phrase to mean that the learners *invent* all knowledge for themselves. Together with the assertion that validation of the constructed knowledge lies entirely within the learner, this leads critics to the conclusion that constructivists believe all knowledge is relative, or “anything goes.” This is clearly a misunderstanding of constructivism, yet it seems fairly widespread and a troubling obstacle for many people. Hein himself does not make this mistake, yet in *Learning in the Museum* he misses the opportunity to answer these critics by addressing the question of how established knowledge does fit within constructivist theory.

In the ongoing development of museum education, one of the basic tools continues to be visitor studies and one of the greatest needs is for a firmer underlying educational theory. *Museums: Places of Learning* and, to a greater extent, *Learning in the Museum* present a thorough review of the former and make significant contributions to the latter. While some fundamental questions and issues remain, these publications have given them sharper focus and have moved the dialogue forward. They are recommended reading for anyone with an interest in museums and their effect.

Comments from George Hein, November, 1968

Dear Ted,

Thanks for sending me a copy of your review. I do like it, even if you make critical comments!

I appreciate your thoughtful analysis, and given a bit more time, I'll reply to you in detail. Briefly for now, I think you make four important critical points:

1. The publications don't present the actual data about what people learn in museums. I think that's true. I never found a way to summarize all that work which comes from such different theoretical perspectives and thus requires extensive interpretation.
2. Epistemology doesn't cover all educational situations. I disagree, epistemology is always important. What the book doesn't discuss is that we need to consider both epistemological positions (the question, "what is knowledge?" and ontological perspectives (what is the status of knowledge we have.) I have combined the two so as not to get too deep into philosophical waters where I would drown even before my readers. But it does make a difference in your teaching if you think that Newton's laws exist out there and a part of the truth of the universe, or whether you think they are a lovely example of human construction of an explanation of phenomena.
3. Multiple meanings for "learning." I don't see why we need to give up the term to those who have limited its definition. But, the importance of emphasizing the various uses of the term are worth pointing out.
4. Ambiguities of constructivism. Yes, I could go on to talk about social constructivism and personal constructivism and the significant difference between them. I was not quite ready for that yet, when I wrote the book. Personal constructivism is inevitable, but does little to socialize the learner into a larger intellectual community. Social constructivism--as described so brilliantly by Vygotsky and many since--is what education is about. That's one of the themes I plan to cover in the Osher lecture.

George