

# Museum Education

George E. Hein

## Defining Museum Education

The educational role of museums is as old as the modern museum, but only since World War II has it matured into an acknowledged profession. Today, along with a growing literature in the field, there are graduate degree programs in museum education, professional positions for museum educators, large, standing committees for educators within major professional museum organizations (international, national, and regional), and journals dedicated to museum education. This represents a dramatic change in less than fifty years since museum education staff began organizing. Yet a question posed by Lawrence Vail Coleman sixty-five years ago, in his monumental three-volume survey of US museums, can still be asked:

It seems the time has come for museum trustees to face a familiar question. Are museums primarily educational, or are they for only such educational work as can be carried on without limiting the curatorial function? A few museums have decided for education first, but most – most of the great as well as most of the small – are still letting education get along as best it can in an awkward setting. (Coleman 1939: II, 392)

As had been recognized since at least the early nineteenth century, museums, by their very nature, are educational institutions (Hooper-Greenhill 1991a). Only later did museum education come to be one (usually major) specialized function within the museum. The term “education,” however, was not always used. By the time that Coleman was writing, for example, it had acquired such negative connotations for museum educators – implying obligatory, formal, fact-laden information transfer – that many in the museum world preferred to use the term “interpretation.” Tilden’s (1957) classic and still useful book does not mention education, and Alexander’s (1979) thorough primer on all aspects of museology has a chapter on interpretation but none on education.

Nevertheless, whatever the term and however conceived, education has long been an important and increasingly specialized role for museums. This chapter outlines the history of museum education, especially in the United States, before considering shifts in museum theory and their implications for museological practice. The

final section, on the relationship between museum education, social change, and social responsibility, extends the theoretical discussion in the earlier sections by turning to the work of John Dewey and its implications for museum education today.

## Early Museum Education

Collections of objects, even collections carefully classified, organized, and preserved, are not necessarily primarily educational – the world includes many fine private collections. As soon as these objects are in a public museum, however, they are incorporated within a broadly educational project, though not one that is necessarily effective. As Wittlin (1949: 133) points out: “The creation of the Public Museum was an expression of the eighteenth-century spirit of enlightenment which generated enthusiasm for equality of opportunity in learning . . . In practice, the traditions of the former private collections were carried on in the public museums, notwithstanding the contrariety of purpose and of circumstances.”

Wittlin further summarizes the history of European (including British) museum education into two “reform” periods: the first from the mid-nineteenth century to World War I and the second in the inter-war period, 1919–39. The former was characterized by a strong emphasis on illustrating national and imperial strength, as well as serving as “an instrument of investigation into a variety of scientific problems and, to some extent, of education” (Wittlin 1949: 149). The second period witnessed an enormous growth of both museums and museum education, with dual emphasis on nationalistic political themes (for example, in support of socialist society in the USSR and fascist societies in Germany and Italy), as well as on exhibiting new conceptions of art and science.

The United States was long recognized as the leader in developing the educational role of museums. Orosz (1990) has argued that “American” (i.e. United States) museums were firmly educational from their outset (see also chapter 8), although he acknowledges that a steady stream of criticism questioned how well they lived up to their educational missions. Children’s museums, universally recognized as primarily educational, began in the US with the establishment of the Brooklyn Children’s Museum (originally the Brooklyn Institute of Arts and Sciences) in 1899, and many US museums developed strong education departments in the early years of the twentieth century, often in collaboration with local school districts.

Although, in general, nineteenth-century museums were acknowledged to be educational institutions, the actual educational work was carried out in a haphazard and often unsatisfactory manner when viewed from the perspective of subsequent educational theory. Museum education was subject to the same constraints that limited the formal education sector: there was little historical background and limited theory to guide any institution that attempted to educate a large segment of the population. Although Western educational theory goes back to Plato, the concept of educating *hoi polloi* only became popular in the nineteenth century.

Critics of museum education in the nineteenth century, who described museums as restrictive in admission, lacking in orderly arrangement of objects, and with poor guidance for visitors, were uttering views also frequently expressed about state

## George E. Hein

schools for the public in that period. Formal education was still limited to a minority of the population (despite school attendance laws, many children lived on farms far from schools or worked long hours in factories) and, beyond the primary grades in which reading, writing and simple mathematics were taught, restricted to the classical curriculum.

Efforts to exploit the educative function of museums were guided by curators and directors; there was no formal education staff. The recognition of education as a specialized function of museums is primarily a twentieth-century phenomenon, paralleling the emergence of modern human development theory, the establishment of the social sciences as legitimate academic subjects, and the establishment of the modern state school and its rejection of the classical curriculum.

## Modern Museum Education

Current definitions of museums – whether describing an institution that contains precious objects, material of primarily historical or scientific value, natural settings designated as museums, or specially built exhibitions used to illustrate ideas – usually include some statement about public access and education. According to the International Council of Museums (ICOM n.d.): “A museum is a non-profit making, permanent institution in the service of society and of its development, and open to the public, which acquires, conserves, researches, communicates and exhibits, for purposes of study, education and enjoyment, material evidence of people and their environment.” This statement, on the current ICOM website (2005), illustrates the growing recognition of the significance of education. In the 1946 definition, from which this one evolved, education is not mentioned.

A similar evolution is seen in the series of policy statements issued by the American Association of Museums over the past thirty-five years. The Belmont Report (American Association of Museums 1969) made a case for federal support of US museums and argued that the museum’s function to provide “pleasure and delight” to visitors was not incompatible with an educational mission. It proposed that the educational work of museums be strengthened. A more recent policy statement, *Excellence and Equity*, described in its preface as “the first major report on the educational role of museums ever to be issued by the American Association of Museums,” states boldly: “[This report] speaks to a new definition of museums as institutions of public service and education, a term that includes exploration, study, observation, critical thinking, contemplation and dialogue” (American Association of Museums 1992: 6). While such a definition was hardly new in 1992, the report reflects a growing priority being accorded – by some at least – to education among the museum’s various functions (see also Anderson 1997).

## Education versus aesthetics and social responsibility

According to Zeller (1989), in a lengthy and thorough essay on the history of art museum education, three possible museum “philosophies” or missions can be identified: the educational museum, the aesthetic museum, and the social museum. Each

can be illustrated by reference to a seminal museum figure from the late nineteenth and early twentieth century.

The museum as an educational institution was championed by George Brown Goode (1851–96), curator and administrator at the Smithsonian Institution (Kohlstedt 1991; see also chapter 9). Goode once stated that an “efficient museum” would consist of “a collection of instructive labels, each illustrated by a well-selected specimen” (quoted in Alexander 1983: 290), and he argued that the museum should be an institution of ideas for public education. By contrast, Benjamin Ives Gilman (1852–1933), also a museum administrator, argued for the primacy of the aesthetic role of a museum, that it be considered a temple for the contemplation of beauty. He felt that art galleries, especially in contrast to university museums, were not well suited for formal education. The third position, emphasizing the social responsibility of museums, is illustrated by the work of John Cotton Dana (1856–1929; see Peniston 1999). Dana, first a librarian and then director of the museum he founded in Newark, New Jersey, may have had a stronger influence on museum professionals, both curators and educators, than either Gilman or Goode; his students assumed leadership roles in many museums as they grappled with the rapidly changing world after World War I.

A closer examination of the work of these three powerful figures suggests, however, that this clear-cut categorization of their views is inadequate. To a significant degree, all three recognized the educational role of the museum, while also acknowledging other goals. Even Goode’s position as a proponent of the “educational” museum was not unmitigated. For example, he did not think that museums were appropriate venues for educating children.

I should not organize the museums primarily for the use of the people in their larval or school-going stage of existence. The public school teacher, with the illustrated textbooks, diagrams, and other appliances, has in these days a professional outfit which is usually quite sufficient to enable him to teach his pupils. School days last, at the most, only from four to fifteen years, and they end with the majority of mankind, before the minds have reached the stage of growth favorable for the reception and assimilation of the best and most useful thought. (Goode 1888: 307)

The champion of the aesthetic museum – Gilman – is remembered today primarily for his educational efforts. He introduced “docents” into the gallery, arguing that funds should be shifted from hiring more guards to adding staff who could talk intelligently to visitors about the paintings, and installed extensive, large-print labels in the galleries to accommodate the needs of the general public, stating: “I think it is nonsense to acquiesce in opening our doors on Sunday and at the same time to do nothing to help the Sunday visitor” (Gilman 1924). The “Sunday visitor” was a euphemism for working-class museum-goers who could only come on their one day free from work; Gilman here shows social responsibility as well as educational concern. Dana, too, defies easy categorization: his methods for achieving his social agenda were certainly educative, both in general – he believed the social role of the museum was to educate the community, and specifically – he hired a former school superintendent to develop and implement an educational plan for the museum.

Even if all of these important figures can be seen as valuing education, the idea that museums are primarily educational continued to be controversial, especially in the art museum community. Although there were various proponents of education in art museums, interviews with US art museum directors in the 1980s found museum education to be regarded with some disdain (Eisner and Dobbs 1986), a position that is still held in some quarters (for example, Cuno 2004).

### Specialized educational work

The progressive social-political movements of the late nineteenth century and, specifically, the progressive education efforts in most Western societies, combined with child development research, led to the development of specialized educational activity and specialized personnel in museums in the twentieth century. The methods used were closely associated with those of the progressive education movement: learning from and with objects, an emphasis on inquiry, the use of local material and activities, and appeal to the visitors' interests and prior experiences. Story-telling, lectures illustrated with lantern slides, and kits for distribution to schools were all popular. The earliest mention of the title "museum educator" is in Coleman's 1927 publication, *Manual for Small Museums*.<sup>1</sup> Previously, work was carried out by "curators" and "gallery instructors."

Today, education is a major museum function, carried out by a dedicated staff and of concern to curators, exhibition designers, and other museum professionals. In large museums, the education staff, including part-time workers, docents, and occasional teachers, may represent up to 50 percent of all employees. Museum educators engage in an extremely broad range of activities (Hooper-Greenhill 1989, 1991b). A recent survey of the tasks of art museum educators (Wetterlund and Sayre n.d.) collected data on "seven areas of programming: tour programs; informal gallery learning programs; community, adult and family programs; classes and other public programs; partnerships with other organizations; school programs; and online educational programs." This showed that museum educators carried out more than forty-five different kinds of task on these programs, including not only the familiar classes and tours but activities such as organizing community festivals, developing partnerships with universities and city agencies, setting up video-conferencing, and assisting students to curate exhibitions on museum websites. The survey does not include all the additional responsibilities of museum educators, such as supervising staff and volunteers, serving on exhibition development teams, or participating in visitor and other research. Not only is museum education a broad and demanding field, however, it is also constantly changing and expanding. Museum educators are now viewed (Bailey and Hein 2002) as a "community of practice," a phrase applied to work groups, classrooms, and other informal associations whose members carry out similar, often collaborative, tasks and build a shared expertise (Wenger 1998).

The workforce dedicated to museum education is primarily female, even in science museums (ASTC 2002), reflecting traditional gender divisions in our society. In the US, in the 1970s and 1980s, museum educators, following major social trends, participated, with some success, in feminist political efforts to improve their standing within the larger museum workforce (Glaser and Zenetou 1994).

## Educational Theory

A century of enormous expansion of education, both in the formal and informal sectors, as well as an explosion of social science research and intellectual ferment have provided the opportunity to consider contrasting theoretical and practical approaches to education. Broadly, educational theories can be classified according to two domains: the theories of learning and the theories of knowledge they profess (Hein 1998). All educational theories include views on both these topics and their combination suggests particular educational practices (pedagogy) and results in different kinds of educational programs.

Theories of learning can be roughly grouped along a continuum from “passive” to “active,” that is, from theories, on one extreme, that consider the mind to be a passive recipient of new sensations that are absorbed, classified, and learned, to the opposite extreme that postulates that learning consists of active engagement of the mind with the external world, wherein the learner gains knowledge by thinking about and acting on the external world in response to stimuli. The combined research of the past century has resulted in almost universal agreement that learning is an active process that requires engagement, and that this process is significantly modulated by the learner’s previous experience, culture, and the learning environment (Bransford et al. 1999; see also chapter 19).

Theories of knowledge are concerned with whether learning entails acquiring truths about nature or constructing knowledge, either personally or culturally, that is “true” only for those who accept it. These two domains, theory of learning and theory of knowledge, can be graphically represented as a two-dimensional plot that delineates a range of educational theories, and can be described by the extremes of each continuum in terms of the four quadrants in fig. 20.1.

Any educational program, whether for a school or a museum, either explicitly or implicitly involves notions of learning and education that can be plotted onto the diagram. Although the traditional notion of a passive mind receiving information and somehow absorbing it without active participation in the learning process has been generally discredited in the educational research community, it dominated classical behaviorist stimulus–response theory and received considerable attention in the museum profession in the inter-war period. The only major museum visitor studies research program in the world prior to the 1960s (Robinson 1928; Melton 1935; Melton et al. 1936), carried out in the United States under the auspices of the AAM and funded by the Carnegie Corporation, was strictly behaviorist; only observational “tracking” studies and paper-and-pencil tests for school children were employed (see also chapter 22).

Stimulus–response theory (behaviorism) persists dominantly in the formal sector; it provides the theoretical basis for the belief that progress in schools can be adequately assessed through short-answer, paper-and-pencil tests (or, more commonly today, fill-in-the-blank computer-scored tests); that memorization and drill can substitute for meaningful experiences; that both knowledge and learning settings can be isolated from real-world contexts without diminishing learning; as well as a number of other regimented practices common to state school systems. In the main, museum

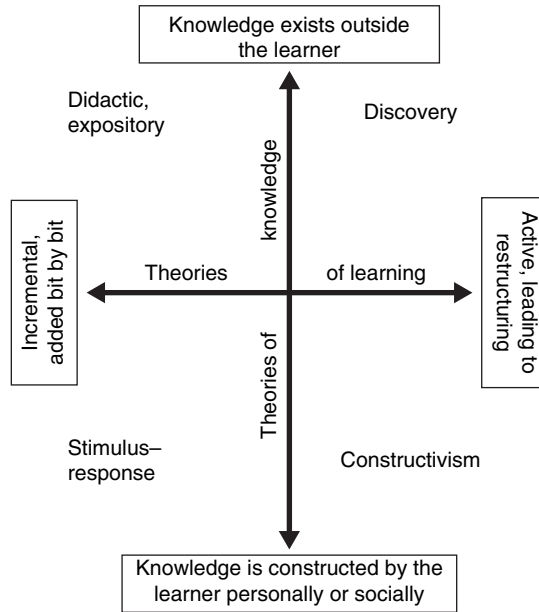


Fig. 20.1 Theories of education.

educators recognize that this theory is not appropriate for learning in the museum, although the pressure from the formal sector leads many to design programs that tend to that direction. Besides the recognition that the “passive mind” theory may be insufficient to describe museum learning, there is the added practical problem that most museum education activities are of short duration, sporadic, carried out in settings unfamiliar to many participants, and incidental to disciplined educational exposure; all conditions unfavorable to traditional pedagogy.

One consequence of the concept that the mind is active and that previous experience, culture, disposition, and development influence learning, is the increasing importance of learners’ characteristics for educators. If the learner is seen as a passive vessel into whom education is poured (to use the crude but popular metaphor) then the focus of any pedagogy is on organizing the subject matter and presenting the content in the most appropriate way so that it can be absorbed by the student (or museum visitor). But the notion of an active mind mandates a concern for the particular “mind” of the learner. Thus, in the past century, and especially in the past fifty years, a variety of schemas have been proposed to analyze learner characteristics. One focus has been on dispositions, leading to classifications of types of learner. These schemes include binary (analytic/global; left brain/right brain) as well as multiple classifications of types of learning styles, minds, or intelligences (see Hein 1998).

Another approach is to isolate developmental stages and discuss appropriate education for the resulting categories of learner. In the museum literature, this is illustrated by discussions focused on learning by children (Maher 1997: ch. 5) or adults (Chadwick and Stannett 1995; Sachatello-Sawyer et al. 2002). A final approach exam-

ines the social context of learning, with an emphasis on either past experience (i.e. culture) or the current educational situation (i.e. the milieu in which learning takes place in the museum). While the particulars that are emphasized by the various theoretical analyses differ, the commonality among all is a recognition of the need to take into account all the possible factors – development, culture, previous knowledge, and current environment – that may influence learning. Current interest in accessibility – physical, intellectual, and cultural for *all* visitors – can be viewed as a result of the shift in perspective to focus on visitors, the increased interest in the social role of museums, and increased sensitivity to the multiple viewpoints that need to be accommodated in the museum (Falk and Dierking 2000; see also chapter 19).

Increasingly, this constructivist conception that learning in the museum represents meaning-making by museum visitors – that these meanings are mediated not only by museum objects and the way in which they are presented (exhibited) but also powerfully by the visitors' culture, previous personal experience, and conditions of their visit – is recognized as an essential consideration for museum education (see Silverman 1995; Hooper-Greenhill 1999; Rounds 1999).

## The Constructivist Museum

Constructivism has a particular appeal to the educational work of cultural institutions because it matches the informal, voluntary nature of most learning associated with museums. However, its application to museum education presents a number of particular challenges.

### Exhibitions

If the educational intention of museum exhibitions is to facilitate visitor meaning-making, then this has a profound impact on the nature of exhibitions and how they are conceptualized and constructed. Most obviously, if the goal is to facilitate visitors' opportunities to reach their own understandings, then the authoritative curatorial voice needs to be muted and modified. Museums have addressed this issue in a variety of ways, including by providing several different interpretations of an object or exhibit or by encouraging visitors to add their comments. Some exhibitions have incorporated visitor comments into the exhibition space and a few art museums have even encouraged visitors to add their own labels to displayed works (Nashashibi 2002). Other strategies have included posing provocative questions to visitors, rather than answers; or seeking to upset linear or chronological representation.

Creating exhibitions that do not assume curatorial authority has also involved a greater range of people in exhibition development (Roberts 1997). This includes not only museum educators but also the expansion of visitor research and “front-end” (i.e. prior to exhibition completion) evaluation, as well as efforts to involve the community (see chapter 11). There have also been some radical experiments, involving engagement between particular social groups and other visitors in the museum, such as Heinecke's *Dialogue in the Dark* (Heinecke and Hollerbach 2001)



## George E. Hein

in which visitors enter totally dark spaces to be guided by docents who have low vision.

### Redefining “learning” and “education”

Another response to the shift toward constructivism is the redefinition of education as “meaningful experience” rather than “defined content outcome.” One component of this shift is seen in discussions of the definitions of “learning” and “education.” A recent exchange was sparked by the suggestion (Ansbacher 2002) that “learning” was too restrictive a term for describing museum experiences. In general, as was pointed out above, definitions of learning are now broad enough to include enjoyment, satisfaction, and other outcomes from experiences. Dewey’s (1938) comment that experience is educative (unless it “distorts or arrests the growth of further experience”) has received considerable attention.

### Evaluation and research

Currently, the visitor studies research community has largely relegated behaviorist-oriented research to the background and seeks to employ methods that are more consistent with constructivist views of education, adapted from general social science research practices applied to educational research. Thus, conversational analysis (Leinhardt et al. 2002) and socio-cultural theory (Leinhardt et al. 2002; Paris 2002), as well as concept mapping (chapter 19) and other naturalistic methods, are considered more appropriate to investigating learning in museums than experimental design approaches (Hein 1997; see also chapter 22). However, it is important to acknowledge that only behavior, not mental processes, are directly observable by common social science methods, and all analytic tools require interpretation by humans who always bring cultural biases to their analysis.

### Educational work with schools

The emphasis on experience and personal meaning-making in the museum community raises serious issues for specialized educational work with school children. On the whole, formal education in the UK and the United States most recently has moved in the direction of an emphasis on the development of educational “standards,” increased use of testing for outcomes, and linking funding to various measures of “success” and “failure.” The adoption of a national curriculum in the UK in 1989 quickly led to a series of publications proposing ways in which museums could support the curriculum.

More recently, in both countries, standards, while still significant, have been overshadowed by mandatory testing programs, not always carefully aligned with curriculum content. It is the tests that determine what is taught more than the standards. In the United States, where required tests seldom include arts and humanities, these subjects have become “endangered species” in the curriculum (von Zastrow 2004). The divergence of policy directions between most museum education programs and state schools complicates the tasks for museum educators.

## Assessing outcomes of constructivist education

If a more constructivist educational theory is used, then the question of *what* outcomes to measure becomes significant. If visitors are intended to make personal meaning from their museum experience, then how can the outcome be measured? What criteria can be applied to distinguish a successful museum educational activity from one that is a failure? This issue is larger than the concern to match museum education activities to educational needs in the formal sector; it needs to be addressed in any effort to evaluate learning in the museum. Two strategies have been employed to begin to answer this question – the development of special procedures to assess learning, and redefinitions of outcomes for museum visits – but it remains a complex issue and is discussed further by Eilean Hooper-Greenhill in chapter 22.

## Social Change and Social Responsibility

Museum education converges with social responsibility: the social service that museums, as public institutions, provide is education. A constructivist or progressive educational mission necessarily puts an emphasis on social change.

From its earliest formulations by John Dewey, progressive education has been a means for achieving a social goal, namely the improvement of society. In *Democracy and Education* (1916), Dewey states this clearly. While he sees education as a biological necessity for all organisms, and for humans as essential for the continuation of culture, he argues that achieving particular kinds of society is dependent on certain forms of education. In a society that is satisfied with the status quo (a “static” society), one that wishes to continue unchanged, traditional forms of education are sufficient. But, if there is a wish to better society – to create a “progressive” society – then another form of education is required.

In static societies, which make the maintenance of established custom the measure of value, this conception (i.e. “the catching up of the child with the aptitudes and resources of an adult group”) applies in the main. But not in progressive communities. They endeavor to shape the experiences of the young so that instead of reproducing current habits, better habits shall be formed, and thus the future adult society be an improvement on their own. (Dewey 1916: 79)

Underlying all of Dewey’s work, and that of most progressive educators both in the formal sector and in museums, was a deep moral sense and two intense beliefs: faith in democracy and in the efficacy of education to produce a more democratic society (Westbrook 1991: xv). The following are some of the matters to which Dewey drew attention and that need to be addressed in any attempt to formulate and implement progressive museum education.

- 1 Constant questioning of all dualisms, such as those between fine and applied arts, theory and practice, or categories of visitors. As Dewey pointed out, such distinctions frequently result in making value judgments, in raising one above the other in a moral sense, and thus lead to inequalities in society.

## George E. Hein

- 2 Recognition that the goal of education is further education, that solving problems means that new problems are unearthed, that the outcome of inquiry is further inquiry. On the one hand, such a stance, taken consciously, prevents museum educators from accepting simple solutions or assuming that reaching an “educational objective” is sufficient. On the other hand, it forces educators to ask themselves whether they have provided the requirements for repeated and continuing inquiry, such as open-ended questions, lots of materials, or alternative possible approaches to inquiry.
- 3 Applying progressive education theory universally. Museum educators need to do more than challenge their visitors; they need to constantly challenge themselves, examine their practice, and reflect on the extent to which it matches – both in process and in content – the theory they espouse.
- 4 Connect educational work back to life. One of the hallmarks of Dewey’s educational theory and practice was a constant concern that school be part of life, not divorced from it. In museum education work (including the development of exhibitions), we need to emphasize that exhibitions should come from life experiences and should connect to situations outside the museum.

Finally, and in summary, Dewey not only recognized the confusion and complexity of life, he embraced it. His philosophy of pragmatism did not attempt to describe an ideal world, distinct from the awkward and constantly changing realities of actual existence. A recognition that permeated all his ideas was that life is never simple or easy; it is always complex, uncertain, and messy. The price for giving up any “quest for certainty” (Dewey 1929) is the necessity of accepting an uncertain, changing world in which we struggle to make meaning. But the reward is to embrace life with its opportunities for both meaning-making and feeling, and rejoice in the complexities of the rich environment in which we struggle.

### Note

- 1 I am indebted to Derek Monz for this reference.

### Bibliography

- Alexander, E. P. (1979) *Museums in Motion: An Introduction to the History and Function of Museums*. Nashville: American Association for State and Local History.
- (1983) *Museum Masters: Their Museums and their Influence*. Nashville: American Association for State and Local History.
- American Association of Museums (1969) *America’s Museums: The Belmont Report*. Washington, DC: American Association of Museums.
- (1992) *Excellence and Equity: Education and the Public Dimension of Museums*. Washington, DC: American Association of Museums.
- \*Anderson, D. (1997) *A Commonwealth: Museums and Learning in the United Kingdom*. London: Department of National Heritage.

- Ansbacher, T. (2002) What are we learning? Outcomes of the museum experience. *The Informal Learning Review*, 53 (1): 4–9.
- ASTC (2002) Science center workforce 2001: an ASTC report. Washington: Association of Science-Technology Centers.
- Bailey, E. B. and Hein, G. E. (2002) Informal meets formal: museum educators and communities of practice. *ASTC Dimensions* (November/December): 9–11.
- Bransford, J. D., Brown, A. L., and Cocking, R. R. (1999) *How People Learn*. Washington, DC: National Academy Press.
- Chadwick, A. and Stannett, A. (eds) (1995) *Museums and the Education of Adults*. Leicester: National Institute for Adult Continuing Education.
- Coleman, L. V. (1927) *Manual for Small Museums*. New York: G. P. Putnam's Son.
- (1939) *The Museum in America: A Critical Study*, 3 vols. Washington, DC: American Association of Museums.
- Cuno, J. (ed.) (2004) *Whose Muse? Art Museums and the Public Trust*. Princeton, NJ: Princeton University Press.
- Dewey, J. (1916) *Democracy and Education*. New York: Macmillan, 1944.
- (1929) *The Quest for Certainty*. New York: Minton, Balch and Co., 1988.
- (1938) *Experience and Education*. Terre Haute, IN: Kappa Delta PI; New York: Simon and Schuster, 1997.
- Eisner, E. and Dobbs, S. (1986) *The Uncertain Profession: Observations on the State of Museum Education in Twenty American Art Museums*. Los Angeles: Getty Center for Education in the Arts.
- Falk J. H. and Dierking, L. D. (2000) *Learning from the Museum*. Walnut Creek, CA: AltaMira Press.
- Gilman, I. B. (1924) Information frames. Unpublished manuscript, January 20. Boston, MA: Museum of Fine Arts Archives.
- Glaser, J. R. and Zenetou, A. A. (1994) *Gender Perspectives: Essays on Women in Museums*. Washington, DC: Smithsonian Institution Press.
- Goode, G. B. (1888) Museum-history and museums of history. In S. Kohlstedt (ed.), *The Origins of Natural Science in America*, pp. 297–319. Washington, DC: Smithsonian Institution Press, 1991.
- Hein, G. E. (1997) The maze and the web: implications of constructivist theory for visitor studies ([www.lesley.edu/faculty/ghein/papers\\_online/mazeweb/mazeweb\\_1997.html](http://www.lesley.edu/faculty/ghein/papers_online/mazeweb/mazeweb_1997.html); accessed September 22, 2005).
- \*— (1998) *Learning in the Museum*. London: Routledge.
- Heinecke, A. and Hollerbach, U. (eds) (2001) *Dialog im Dunkeln: Eine Ausstellung zur Entdeckung des Unsichtbaren* [Dialogue in the Dark: An Exhibition for the Discovery of the Unseeable]. Hamburg: Consens Ausstellungen.
- Hooper-Greenhill, E. (ed.) (1989) *Initiatives in Museum Education*. Leicester: Department of Museum Studies.
- (1991a) *Museum and Gallery Education*. Leicester: Leicester University Press.
- (1991b) *Writing a Museum Education Policy*. Leicester: Department of Museum Studies.
- \*— (1999) *The Educational Role of the Museum*, 2nd edn. London: Routledge.
- ICOM (International Commission of Museums) (n.d.) ICOM definition of a museum (<http://icom.museum/definition.html>; accessed September 22, 2005).
- Kohlstedt, S. G. (1991) *The Origins of Natural Science in America*. Washington, DC: Smithsonian Institution Press.
- Leinhardt, G., Crowley K., and Knutson, K. (eds) (2002) *Learning Conversations in Museums*. Mahwah, NJ: Erlbaum.

## George E. Hein

- Maher, M. (ed.) (1997) *Collective Vision: Starting and Sustaining a Children's Museum*. Washington, DC: Association of Youth Museums.
- Melton, A. W. (1935) *Problems of Installation in a Museum of Art*. Washington, DC: American Association of Museums (reprinted 1988).
- , Feldman, N. G., and Mason, C. W. (1936) *Experimental Studies of the Education of Children in a Museum of Science*. Washington, DC: American Association of Museums (reprinted 1988).
- Nashashibi, S. (2002) Visitor-written labels in US art museums. Unpublished MA dissertation. Orinda: JFK University.
- Orosz, J. J. (1990) *Curators and Culture: The Museum Movement in America, 1740–1870*. Tuscaloosa: University of Alabama Press.
- Paris, S. G. (ed.) (2002) *Perspectives on Object-centered Learning in Museums*. Mahwah, NJ: Erlbaum.
- Peniston, W. A. (ed.) (1999) *The New Museum: Selected Writings by John Cotton Dana*. Washington, DC: American Association of Museums.
- \*Roberts, L. (1997) *From Knowledge to Narrative: Educators and the Changing Museum*. Washington, DC: Smithsonian Institution Press.
- Robinson, E. S. (1928) *The Behavior of the Museum Visitor*, n.s., no. 5. Washington, DC: American Association of Museums.
- Rounds, J. (ed.) (1999) Special issue on meaning making. *Exhibitionist*, 18 (2): 5–44.
- Sachatello-Sawyer, B., Fellenz, R. A., Burton, H., Gittins-Carlson, L., Lewis-Mahony, J., and Woolbaugh, W. (2002) *Adult Museum Programs: Designing Meaningful Experiences*. Walnut Creek, CA: AltaMira Press.
- Silverman, L. H. (1995) Visitor meaning-making in museums for a new age. *Curator*, 38 (3): 161–70.
- Tilden, F. (1957) *Interpreting our Heritage*, 3rd edn. Chapel Hill, NC: University of North Carolina Press.
- Wenger, E. (1998) *Communities of Practice: Learning, Meaning, and Identity*. Cambridge: Cambridge University Press.
- Westbrook, R. B. (1991) *John Dewey and American Democracy*. Ithaca, NY: Cornell University Press.
- Wetterlund, K. and Sayre, S. (n.d.) Art museum education programs survey 2003 ([www.museum-ed.org/research/surveys/2003mused/index.shtml](http://www.museum-ed.org/research/surveys/2003mused/index.shtml); accessed September 22, 2005).
- \*Wittlin, A. S. (1949) *The Museum, its History and its Tasks in Education*. London: Routledge and Kegan Paul.
- von Zastrow, C. (2004) *Academic Atrophy: The Condition of Liberal Arts in America's Public Schools*. Washington, DC: Council for Basic Education.
- Zeller, T. (1989) The historical and philosophical foundations of art museum education in America. In N. Berry and S. Mayer (eds), *Museum Education: History, Theory, and Practice*, pp. 10–89. Reston: The National Art Education Association.