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Is Meaning Making Constructivism? Is Constructivism Meaning Making?¹

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Is Meaning Making Constructivism? Is Constructivism Meaning Making? Short answers to these two questions are “No” and “Yes,” respectively. The two terms, although frequently confused, are not synonymous. Their formal relationship is straightforward: *meaning making* is a general term that refers to what visitors inevitably do in museums. *Constructivism* is a particular educational theory that not only acknowledges visitor meaning making but uses it as a central component of a definition of education. All discussions of constructivism include meaning-making; but meaning-making, (although often appropriately called “knowledge construction”) does not necessarily imply Constructivism.

Meaning Making

Modern educational theory has stressed learners’ active participation in learning. A major contribution of educational research during this century has been its focus on the processes that learners use more than on the structure of the material to be learned. Inevitably, we have come to the conclusion, long recognized in popular literature, that humans interpret data the senses provide, and that these personal interpretations, i.e. meaning making, are pedagogically significant.

All of us constantly organize and select the information our senses take in from the natural world and from the symbolic and cultural worlds of words and signs. This is how we make sense of these worlds. This activity is independent of any particular educational theory. It’s a consequence of our being human, of our neurological system and the way it develops and interacts with the environment. Children are not born with the ability to interpret the world as their elders do. They have to learn the meaning of things and they do so gradually, as they gain

experience. Piaget's clinical interviews of young children are full of these incomplete interpretations of nature or language, based on children's meaning making. Most "cute" stories about our children's and grandchildren's intellectual development — for example, the Sunday school child's hearing the familiar hymn, "Gladly the cross I'd bear," as "Gladly the cross-eyed bear" — stem from their efforts to make sense of the world based on their personal experience.

Further evidence for the universality of meaning making comes from the experience of those deprived of the full range of sensory connections with the world. Oliver Sacks has written about people with various neurological or sensory deficiencies. One striking group whose experiences he describes are the few individuals who, blind all or almost all of their lives, suddenly regain sight. These patients face profound, long-lasting sensory, intellectual and emotional challenges in their attempts to make meaning of the overwhelming visual world they encounter. Sacks says,

The rest of us, born sighted, can scarcely imagine such confusion. For we, born with a full complement of senses, and correlating these, one with the other, create a sight world from the start, a world of visual objects and concepts and meanings. When we open our eyes each morning, it is upon a world we have spent a lifetime learning to see. We are not given this world: we make our world through incessant experience, categorization, memory, reconnection. (Sacks, 1995: 114)

Finally, significant research by cognitive psychologists during the past few decades on how people learn, how they come to understand their jobs or professional work, how they learn to play chess or pursue other hobbies, and, in general, how the mind functions informs us that all humans construct knowledge. Summarizing this work in a recent National Research Council publication, the authors state,

Humans are viewed as goal-directed agents who actively seek information. They come to formal education with a range of prior knowledge, skills, beliefs, and concepts that significantly influence what they notice about the environment and how they organize and interpret it. This, in turn, affects their abilities to remember, reason, solve problems, and acquire new knowledge. . . .In the most general sense, the contemporary view of learning is that people construct new knowledge and understandings based on what they already know and believe.

(Bransford, Brown and Cocking, p. 10)

Important in this evidence is the emphasis on the process of learning and individual meaning making. Regardless of whether we call it "construct new knowledge" or "make meaning", learning is meaning making. In museums, visitors don't necessarily learn what is intended in an exhibit or program, nor do they necessarily learn in a sequence that is determined by the structure of the subject or the way the exhibit developers lay out the material. They make meaning based on the new experiences and how these fit into what they already have in their minds. Exhibit and program developers need to appreciate this.

Meaning Making and Pedagogy

One can acknowledge personal meaning making and still ignore it from a pedagogic perspective. Anyone who believes that there is a single "correct" way

of learning something, a “most efficient” order to learning a subject or that one must start at point alpha and end at point omega in a learning sequence, chooses to put less emphasis on individual meaning making and more on pedagogy based on other principles.

Rational systems for organization of subjects used as the basis for instruction, or for organizing exhibits, are common. In Learning in the Museum (Hein, 1998: 25-29), I described an example of such a system developed by Gagné (1977). Many training courses arrange material sequentially by some classification scheme that is intended to facilitate learning. These schemes are usually based on an analysis of the subject, not on the possible individual meanings actual learners will impose on the material. These systems may provide efficient ways to learn particular skills or subjects for some learners, if they match the personal learning styles and previous knowledge of these learners. Others may find the structure provided annoying or it may make the material totally opaque to a particular student.

The history of education provides evidence of a long tradition of belittling personal meaning making. Incorrect answers (based on previous personal experiences) have been viewed not only as incorrect, but as something that needed to be expunged with moral force, as a character fault. Charles Dickens’ dogmatic school master, Mr. Choakumchild, in the novel, Hard Times, chides a pupil who tells him that her name is “Sissy,” informing her that Sissy is not a name. Even when she says “It’s father that calls me Sissy, Sir.” He corrects her, “Your father has no business to do it.” This example is in a chapter titled “Murdering the Innocents” which ends with the author’s plea that teachers make less effort to destroy the imaginations of children in their power.

Unfortunately, this negative attitude still influences education in general and exhibit design specifically. Teachers still blame children in their care if they don’t learn the material presented to them, and some exhibit developers have been known to express the view that if visitors don’t understand the intended message of a particular exhibit, it’s because the visitors are unprepared, uneducated or otherwise lacking. Whether we like it or not, visitor meaning making is an inevitable consequence of opening museum exhibits to visitors. It’s something visitors always do, just as Molière’s hero, M. Jourdain, in *Le Bourgeois Gentilhomme*, had been speaking prose all his life.

Constructivism

Constructivism is an educational theory that both recognizes the importance of individual meaning making and makes it a central aspect of pedagogic practice. Several components of the theory are important in developing a constructivist pedagogy for exhibits. Some are concepts shared with related pedagogic ideas; others are unique to constructivism.

First, constructivist theory argues that if personal meaning making is inevitable, then it is essential to find out what experiences visitors bring with them to museums. What “prior knowledge,” that is, all their experiences, categories,

possible connections, and memories (Roschelle, 1995), do visitors have that would influence the meanings they will make? Since audiences are made up of diverse individuals and exhibition settings are never identical, this turns out, inevitably, to be an empirical question, i.e., one that needs to be tested for each new exhibition. What do potential visitors know about Africa, prehistoric times, electricity, or how sound travels underwater (to name only a few topics that have been the subject of front end studies)? Visitor studies literature is beginning to inform us about experiences visitors bring with them and, therefore, at least some of the meanings they may attribute to exhibit components and whole exhibit themes, so that a repertoire of previous experiences is becoming available for exhibit developers.

Second, once we have made an effort to find out what visitors bring with them, we need to discover the meanings they make of our exhibits, based on their content and design. Almost thirty years ago, Alma Wittlin (1971) pointed out the “hazards” of exhibit design, based on visitors’ perceptual limits and cultural biases. More recently, Lois Silverman (1995) and others have argued vigorously that we need to understand what meaning visitors actually make of our exhibitions. A doctoral candidate at Lesley College who took her college undergraduates on a highly structured tour of the Museum of Fine Arts found that, based on their personal meaning making, students had significantly different experiences during the tour (Black, 1998.) Audiences in Washington and Berlin responded differently to an exhibit of 20th Century *avant-garde* art that had been labeled “degenerate” by the Nazi regime (Doering, Pekarik and Kindlon, 1997). The visitor studies literature is rich in examples of visitors’ perceptions and conclusions different from those intended by exhibit developers.

Recognizing the inevitability of personal meaning making leads to concern for the influence of the complete environment on visitors. It becomes important to consider how every aspect of a museum visit can influence meaning making; Museum architecture, the museum’s surroundings, parking problems, admission fees, visitors’ physical comfort, ease of wayfinding, the nature and style of signage all influence visitors’ interpretations.

All of these issues are significant to everyone who accept the inevitability of personal meaning making. Constructivism carries meaning making further, it views personal meaning making not only as necessary but also as desirable; not only something that needs to be tolerated, but a human attribute that can be exploited to enhance learning. From the constructivist perspective, meaning making is learning. The goal of an educational setting is to facilitate meaning making. For example, Black and McClintock (1995) have suggested that the term “study” rather than “learn” may more appropriately describe what happens in constructivist settings. They evaluate the outcome of exposure to a constructivist school curriculum by the range of interpretation provided by students, not their knowledge of the subject. Thus, the constructivist exhibit will focus on the possibilities for visitors to enlarge their vision, make new connections, expand the scope of their possible understandings, more than focusing on particular ideas or concepts that visitors might learn. This approach is not likely to result in exhibits

that are books on walls, and very likely to encourage designs that provide alternatives to a linear presentation of information.

At *Investigate!*, a hands-on exhibit at Boston's Museum of Science, visitors are encouraged to experiment, and (at least for some of the staff) that they experiment is more important than whether they reach conclusions consistent with canonical science theories. At *Between a Rock and a Hard Place* at the National Museum of American History, visitors are first presented with a perspective on the history of sweatshops in the United States, then they enter a section called "Dialogue," in which six different views on sweatshops are displayed and visitors are encouraged to enter their comments in large comment books. Visitors have provided detailed descriptions of their varied personal connection with the subject (Alexander, 1999). They can even respond to the virtual exhibition posted on the world wide web (Smithsonian, 1999).

These examples illustrate constructivist theories in action; exhibits in which visitors' personal meaning making is not only accepted, but encouraged. Constructivist exhibits accommodating personal meaning making; provide opportunities for visitors to validate and express their own interpretations; and stress that the material presented, whether works of art, a historical narrative or a science concept, represents particular interpretations of nature or culture, and that other interpretations may also contribute rich and interesting perspectives on the same material.

In summary, Educational theories have different perspectives on individual meaning making, as illustrated in Figure 1, below. Some theories focus on the subject to be learned, or the message to be delivered and disregard meaning making or view it as a necessary problem to be overcome. Another set of educational theories acknowledge personal meaning-making and recognize that ideas, prejudices, opinions, memories or world-views visitors bring with them needs to be considered in developing an educational plan. Finally, Constructivist educational theory elevates personal (or socially mediated) meaning-making to a central role in learning.

Figure 1

Meaning Making and Educational Theory

Status of Meaning Making:	Attitudes Towards Meaning making:	Educational Theory:
Meaning making is an inevitable consequence of human interaction with nature and culture	Ignore or suppress	Traditional, Content Centered
	Tolerate or Accept	Discovery, Active Learning, Learner Centered
	Encourage or Embrace	Constructivism

References

Alexander, M. (1999) private communication.

Black, J. B. And R. O. McClintock, (1995) "An Interpretation Construction Approach to Constructivist Design," in Wilson, B. (Editor) Constructivist Learning Environments, Englewood Cliffs, NJ: Educational Technology Publications. Also available at <http://www.ilt.columbia.edu/ilt/papers/ICON.html>

Black, M. (1998) unpublished paper.

Bransford, J. D., Brown, A. L. and Cocking, R. R. (editors) (1999) How People Learn: Brain, Mind, Experience, and School, Washington, DC: National Academy Press.

Doering, Z. D., Pekarik, A. J. And A. E. Kindlon, (1997) Exhibitions and Expectations: The Case of "*Degenerate Art*," Curator, 40(2), 126-141.

Gagné, R. (1977) The Conditions of Learning, Third Edition. New York: Holt Reinhart and Winston.

Hein, G. E. (1998) Learning in the Museum, London: Routledge.

Roschelle, J. (1995) "Learning in Interactive Environments: Prior Knowledge and New Experience," in Falk, J. H. and Dierking, L. D. (eds.) Public Institutions for Personal Learning: Establishing a Research Agenda, Washington: American Association of Museums: 37--52.

Sacks, O. (1995) "To See and Not See," in An Anthropologist on Mars, New York, Knopf.

Silverman, L. (1995) "Visitor Meaning-Making in Museums for a New Age," Curator, 38(3) 161-170.

Smithsonian Institution, 1999 "Between a Rock and a "Hard Place," <http://www.si.edu/nmah/ve/sweatshops/start.htm>),

Wittlin, A. (1971) "Hazards of Communication by Exhibits," Curator, 14(2) 138-150.

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