

Learning from Museums

Visitor

*Experiences and
the Making of
Meaning*

John H. Falk and
Lynn D. Dierking

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Contents

Foreword	vii
Preface	ix
1. Learning from Museums: An Introduction	1
2. The Personal Context	15
3. The Sociocultural Context	37
4. The Physical Context	53
5. Museums and the Individual	69
6. Communities of Learners	91
7. A Place for Learning	113
8. The Contextual Model of Learning	135
9. Documenting Learning from Museums	149
10. Making Museums Better Learning Experiences	177
11. Museums in the Larger Society	205
12. The Future of Museums	219
References	237
Index	265
About the Authors	271

Foreword

Back in the early 1960s, while I was in graduate school trying to pick up some research tools and findings that would help me develop more effective museum exhibitions, I came across Melton's pioneering 1935 monograph, *Problems of Installation in Museums of Art*. I was impressed. His research designs seemed imaginative, his results fascinating, his presentation clear. The Melton research suggested, at least to me, that a science of exhibitry might be possible. A set of general principles could be developed, and if conscientiously followed, more effective exhibitions produced. But with a few lonely exceptions, I didn't find much more museum-visitor research to feed my interest. The well seemed to run dry.

As an alternative, I turned to the fairly extensive research in instructional filmmaking that sprouted in the armed services during the Second World War to see if I could find a deeper spring of analogous examples and inspiration. It became clear from these studies that the hope of developing general principles—if you will, a science of educational filmmaking—was swamped by the uncontrolled variables of the art of the filmmaker. Few significant results were reported in this literature.

Even in the midst of this disappointment, there was a splendid lesson to be learned: if you tried out drafts of the script and storyboards, and later rough edits of the film, on representatives of the target audience, you could rework the material and improve the effectiveness of the completed piece. So as the dream of a science of film- and exhibition-making receded, the practical notion of prototyping to improve a specific exhibition came into focus for me. There seemed to be lots of ways to make a particular exhibition better. Thus I was introduced into the not-yet-professionalized world of formative evaluation. It served me well for many years.

When it became clear over time that the visitor, in addition to the

exhibitor or programmer, contributed to the construction of his or her learning out of what he or she brought to the museum, the whole notion of what it took to create effective exhibitions and programs became even more complicated. Organizing the learning experience was no longer the exclusive responsibility of the museum; it had to be shared with the visitor. And at about the same time, some of us developed a deep philosophical commitment to offering more open-ended experiences where visitors were even encouraged to make whatever meaning they wanted to out of our offerings.

But my dream of a set of explicit and universal principles that could be applied in developing exhibitions and programs still seemed a naive, or at best distant, expectation. It turns out that I may have been looking for the wrong things in the wrong places.

As John Falk and Lynn Dierking suggest in this book, rather than immediately seeking guiding principles to improve our practice, we may need instead to step back and look at the nature of learning in a broader and more holistic way, to immerse ourselves in the research literatures of psychology, anthropology, sociology, and evolutionary biology, in addition to our familiar visitor studies. From that broader perspective, they offer reassurance that creating a set of guiding principles is likely to be much easier and the principles more valid.

In *Learning from Museums*, as in their earlier book, *The Museum Experience* (1992), John and Lynn have gone to a lot of trouble to embed practical issues in these broader theoretical and research contexts. With their help, we can begin to understand more about what is really going on during the learning process in general, information that can then be applied to the specifics of museums. For once we have a better understanding of how museum visitors make sense of these experiences, we can make more informed decisions about how to create the best possible exhibitions and programs for them.

Although none of this solid book is to be missed, practitioners should find the anecdotally rich chapters 8 and 10 particularly useful. In chapter 8, the authors flesh out a Contextual Model of Learning (a more refined version of the Interactive Experience Model from their earlier book) with eight key factors that they feel influence learning and that need to be considered—as a checklist if you like—in creating and developing any exhibition or program plan. They then go on in chapter 10 to illustrate how their contextual model and influential factors can be applied “to make museum experiences better learning experiences.” These chapters suggest that even if we still do not have all the answers, we have some strategies for asking good questions during the development process.

And John and Lynn are not alone. In recent work George Hein and Chandler Screven also strikingly demonstrate that we do not really have to wander about in the dark as if there were no clues to help us develop better museum exhibitions and programs, we just need to widen our lens and apply all the theoretical and practical tools now at our disposal for making sense out of the museum experience.

To offer a few examples, we now have a pretty clear idea from both a theoretical and a practical standpoint how to write text panels that communicate with most visitors. We have figured out how to preorganize a visitor's approach to an exhibition so that he or she can get more out of the experience. We have some clues about how to arrange exhibition components to capitalize on visitors' inclinations to interact with our offerings as part of a social unit. And there are dozens of other examples, as you will see in this book. So even if we have not achieved a true science of museum interpretation, we know a lot more about how to make better public museums than we did back in the 1960s.

For all these recent, substantive, and encouraging developments, there still seems to be a stubborn streak running through our profession that treats museum exhibitry and programming as a mysterious art, entirely dependent on the instincts and skills of the exhibitor and programmer, rather than being built on a growing common body of knowledge. For there is abundant evidence that few of us seem to be paying attention to what we already collectively know. Visitors are just as likely to find themselves frustrated and disappointed by an ineffective exhibition as stimulated and informed by one that really works, and the quality of educational programming seems just as uneven.

In these flawed exhibitions and programs, you can see where their creator is, inadvertently or deliberately, ignoring generally acknowledged rules of thumb or more sophisticated analytical systems like Falk and Dierking's. To return to the earlier examples, labels are too long, copy is not broken down into manageable paragraphs with helpful subheads, type is too small and low to be read by a person with bifocals, terms are obscure to a person new to the subject. The entrance to an exhibition fails to give any clue to what it is really about, what you might be expected to get out of it, how it is organized, and where a good place to start might be. An interactive unit, appealing to a family audience, does not allow room for all members of the family to gather around and participate, is structured as a solo activity, and makes few concessions to the different skills and strategies each member of the group brings to the experience. There are perfectly straightforward ways of dealing with each of these issues, abundantly supported by theoretical frameworks and accessible

research findings, which this book illustrates. Yet a discouragingly large number of us seem not to be paying attention.

Especially disturbing are our colleagues who would not think of presenting information in exhibitions and programs that was not thoroughly grounded in the current research literature of their fields but who remain the most stubbornly inoculated from the influences of the learning theory and visitor studies literature. They just don't—or won't—get it.

None of this is meant to suggest that we have finally arrived at the moment when, by following a few rules, we automatically produce a great exhibition. The interpretive gifts of the exhibitor/programmer are certainly critical, and of course the visitor is probably more than 50 percent responsible for the outcomes of the experiences we try to orchestrate. But still it is becoming harder and harder, with all that we know or can easily dig up and absorb from this and Hein's and Screven's richly referenced books, to excuse the terrible gaffes we persist in making, and then fail to correct, in carrying out our public missions.

So the challenge is there. While we may never achieve the true science of museum learning I had fantasized back in the 1960s, we no longer need to wander around in the dark. We know a lot more than we did even a decade ago. As John and Lynn so clearly show us, we are beginning to have some of the insights and tools we need to make museums better learning environments. It is time we took those insights and tools seriously, incorporated them into our professional repertoire, and learned to use them consistently, thoughtfully, skillfully.

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Preface

Books are like mountaintops jutting out of the sea. Self-contained islands though they may seem, they are upthrusts of an underlying geography that is at once local and, for all that, a part of a universal pattern. And so, while they inevitably reflect a time and a place, they are part of a more general intellectual geography.

—Jerome Bruner, *Acts of Meaning*

First and foremost this is a book about learning. However, since a major point of the book is that all learning is contextual, we would argue that one cannot talk about learning except in relationship to some place and situation. We have chosen to investigate learning in that array of institutions that includes art, history, and natural history museums; science centers; historic homes; living history farms and forts; aquariums; zoos; arboretums; botanical gardens; and nature centers, collectively referred to by the generic term *museum*. Arguably much, if not most, of what we discuss here in relation to learning from museums directly relates to learning from other situations as well, but we will leave that leap to others. For the moment, we are content in our effort to try to synthesize a vast body of knowledge about how, why, and what people learn, mining research from across the social and biological sciences and considering its application to a relatively narrow slice of the world, the world of museums.

Some who read this book will no doubt have read our earlier book, *The Museum Experience*, and might wonder about the relationship of this book to the earlier volume. We consider this to be a sequel to, or at least an extension of, that earlier work. Toward the end of *The Museum Experience* we touched lightly on the issue of learning; in this book it is the major focus. In *The Museum Experience* we proposed a framework for organizing

how one approached the topic of visitor learning and behavior in museums, referred to as the Interactive Experience Model. In this book we build on and extend that model, recasting it as the Contextual Model of Learning, a model that organizes our thinking regarding the complex nature of museum learning. Be forewarned, *The Museum Experience* was a general overview of a broad topic; the current book's intent is far more focused and technical owing to the complexity of what we are describing. Still, the two volumes were designed to complement one another, the first providing a broad overview of the visitor experience in museums, and this second volume focusing on one specific aspect of that experience, visitor learning and meaning-making from museums.

Throughout this book we approach learning from an evolutionary perspective. In this view, learning is the product of hundreds of millions of years of survival-oriented evolution, a continually refining capacity for humans and other animals to intelligently navigate an ever changing social, cultural, and physical world. We pay homage to the wonders of both biological and cultural evolution, which not only shape who we are as humans but also, and more importantly in terms of our topic, define the nature of learning. In this view, evolution is related to and influences not only the process of learning but also its products. In fact, one of the aspects of learning that make it so challenging to understand is that it is always a process and a product, a verb and a noun. Even that most fundamental of all learning products, memory, is actually an ephemeral, ever changing process, while at its heart it is the result of the concrete interaction of hundreds of thousands, even millions, of very real and tangible chemicals and cells within the brain. But what does this have to do with museums?

Increasingly museums can be described as public institutions for personal learning, places people seek out to satisfy their learning needs. One way to characterize the unique and special nature of the learning that occurs in museums is to emphasize the particularly free-choice nature of much, if not most, of that learning. Free-choice learning tends to be non-linear, is personally motivated, and involves considerable choice on the part of the learner as to what to learn, as well as where and when to participate in learning. Therefore, throughout this book, we use the term *free-choice learning* to refer generically to the learning experiences that occur in and from places like museums, as well as those that occur while watching television, reading a newspaper, talking with friends, attending a play, or surfing the Internet. In our opinion, *free-choice* captures the underlying motivational and structural nature of the learning that occurs in and from such settings better than does the other frequently used term, *informal*.

Almost all museums share a commitment to providing enjoyable, public, free-choice learning opportunities through a similar array of educational media—exhibitions, programs, and presentations, augmented by print and broadcast media and, increasingly, by distance learning media such as the Internet. Almost all museums serve both the general public and organized groups such as schools, camp groups, and senior citizens. Thousands of museum professionals invest millions of hours and hundreds of millions of dollars each year to develop educational exhibitions, programs, performances, media presentations, books, catalogues, and web sites for the public. In turn, hundreds of millions of people visit museums each year, primarily to partake of these offerings, on the assumption that they will ultimately learn and find meaning. Do they?

We have been investigating learning in museums for a long time, certainly long enough to know many, if not most, of the pitfalls that can befall anyone intrepid enough to attempt to wrap his or her arms around such an elusive topic. Over the years, we have been variously quoted as saying that no one really knows whether or not anyone learns in museums, or that people only derive attitudinal benefits rather than cognitive ones, or that the primary outcomes derived from museum experiences are social. Although we might dispute these earlier interpretations, in this book we are here to say undeniably that *people do learn in museums*. They come to learn, to find meaning and connection, and they do learn, make meaning, and find connection. Historically, however, documenting this learning has proven challenging.

Elusive or not, learning in museums is now a more important topic than ever. A generation ago it was a topic of interest, but not importance, to the museum community; today it is a topic fundamental to the very essence of museum survival and success. Twenty to thirty years ago only a few took the time to ponder the challenges and rewards of investigating learning within free-choice learning settings. Today, virtually all in the museum community at least ponder, and many are investigating, the questions surrounding how people learn in museums. Why do people go to museums? In what ways do museums facilitate learning? And, in particular, what do people learn in museums?

We are not alone in this quest. Beginning with a modest base of researchers, initially joined by a few and now by many, our inquiries have been built upon, and continue to benefit from, the work of many others, both in the museum field and outside. In fact, among other things, this book is an effort to bring together the thoughts and findings of a diverse set of investigators from the fields of neuroscience; evolutionary biology; cognitive, experimental, developmental, social, and ecological psychology;

anthropology; ethology; behavioral ecology; education; communications; business; and, of course, museum studies. To the extent we have been successful in synthesizing this eclectic group of disciplines, we feel we have been successful in understanding and accurately presenting the story of museum learning. All of us have been guilty of viewing the world with too limited a lens. We feel it is time to change our lenses, to pan the camera back in time and space, and view learning as a panoramic, lifetime event, an effort to find and make meaning. Museum learning is a subset of a larger, ever evolving continuum of learning and meaning-making across the life span.

In the following pages we will attempt to describe the many facets of museum learning, using the Contextual Model of Learning as our map. We will first ground our exploration by sharing data from two museum experiences in chapter 1. Using the framework in chapters 2 through 4 we will investigate the general impact of personal experience and history, social and cultural overlays, and the effects of the physical world on what and how we learn. Throughout these chapters, we have judiciously inserted findings from the burgeoning field of neuroscience. Although focused on museums, these early chapters are the most generic in the book, laying the foundation, as it were, for understanding learning as it occurs in and from museums.

However, to really understand learning from museums requires delving into the specifics of the museum context. Therefore, in chapters 5 through 7 we explore personal context variables related to museum-going and describe the specific sociocultural and physical contexts of museums and how these contexts influence learning.

We put these ideas together in chapters 8 and 9 to address the fundamental questions of the nature of museum learning and what people learn in and from museums. In chapter 10 we present concrete recommendations on how to apply these ideas to the task of making museums better learning environments.

Throughout the book, we will argue that much of what people know is constructed through free-choice learning experiences. It is our belief that this has always been the case but that it will become ever more apparent and true as America and the rest of the world fully transition into the knowledge economy, as we truly become a Learning Society. As we move beyond a service economy to one based on experience, and ultimately transformation, free-choice learning will be at the core of what we in our society consider valuable. From this perspective, understanding free-choice learning is a fundamental foundation for the new Learning Society, and savvy museum professionals need to recognize that museum learn-

ing does not occur merely within the limited temporal and physical envelope of the museum. Therefore, in chapter 11 we extend the limits of our inquiry beyond the boundaries of the physical museum and explore learning from museums within the larger leisure and learning context of the greater society. Finally, in chapter 12, we apply what we have learned about learning from museums to argue how museums can better succeed in the coming Learning Society.

It is our hope that this book will be a useful guidepost for all those concerned with learning in America and beyond, not just those concerned with museums. This is a book about museum learning, but it is also a book about free-choice learning in a Learning Society. Both are topics of extreme importance and timeliness.

We want to thank Mitch Allen and Pam Winding of AltaMira Press for publishing this book and affording us the opportunity to share these ideas with the field. We are grateful to Scott Paris, Dennis Schatz, Marvin Pinkert, Kris Morrissey, Marilyn Hood, Michael Spock, Elizabeth Donovan, Kathy Walsh-Piper, Herbert Weingartner, Jessica Luke, Kathryn Foat, Nancy McCoy, and Wendy Pollock, who read earlier versions of this manuscript and provided important comments and suggestions, all of which have contributed to making this a better book. We would also like to acknowledge a number of individuals who suggested examples, helped track down references and organize citations, and generally contributed to the all-important detail that a book like this requires. For this we thank Dale Jones, DeAnna Banks Beane, Heather O'Mara, Marianna Adams, Leslie McKelvey Adelman, Jody Grönborg, and Mary-Beth Prokop. We also owe a special thank-you to all the staff of the Institute for Learning Innovation who over many years supported us in this effort intellectually, spiritually, and physically.

We are especially grateful to Michael Spock. He has contributed much to the museum field, and we are honored that he would grace this book with a foreword.

Finally, we want to thank all of those in the field who have supported us through their research, practice, and commitment to helping make museums wonderful communities in which to work and learn. Ultimately this is a book for all of you.

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Learning from Museums: An Introduction

The idea that knowledge is essentially book learning seems to be a very modern view, probably derived from the mediaeval distinctions between clerk and layman, with additional emphasis provided by the literary character of the rather fantastic humanism of the sixteenth century. The original and natural idea of knowledge is that of "cunning" or the possession of wits. Odysseus is the original type of thinker, a man of many ideas who could overcome the Cyclops and achieve a significant triumph of mind over matter. Knowledge is thus a capacity for overcoming the difficulties of life and achieving success in this world.

—G. S. Brett, *Psychology Ancient and Modern*

Beware stories that dissolve all complexity.

—David Shenk, *Data Smog*

As America and the rest of the world transition from an industrial to a knowledge-based economy, knowledge and meaning-making more than ever before become key to social and economic well-being. Even though the quantity of information grows exponentially all around us, our thirst for knowledge, for meaning-making, remains unsatisfied. Much as an individual on a life raft in the middle of the ocean says, "Water, water everywhere, but not a drop to drink," so too do we find it difficult to become "knowledgeable and satisfied meaning-makers" despite a glut of information. Where can a knowledge-thirsty public turn for learning? There are books. Despite the hype about declining literacy, the number of books sold per year is at an all-time high.¹ There is television. Not only is

television viewing up,² but so too is the amount and diversity of information-oriented programming.³ There is the staggering growth of the Internet, a fact of which we are all aware.⁴ And, yes, there are museums!

Museums—art, history, natural history, and science museums; zoos and aquariums; botanical gardens and arboretums; and historical sites—are tried-and-true sources of understandable information, places one can trust to provide reliable, authentic, and comprehensible presentations of art, history, natural history, and science objects and ideas.⁵ They are places that both children and adults can leisurely browse to discover the past, present, and future of humanity, the natural world, and the cosmos, where the public can seek and find meaning and connection.⁶ In large part as a result of this classic convergence between ever rising popular demand (the public's desire for knowledge and meaning-making), and a reliable and trusted supplier (institutions capable of presenting ideas to the public in enjoyable and comprehensible experiential formats), museums of all types have been enjoying unprecedented popularity and growth.⁷

Let us put these changes in perspective. Thirty years ago only about one in ten Americans went to museums with any regularity. Ten to fifteen years ago that number had increased to nearly one in four. Today, depending upon which statistic you believe, somewhere between two and three out of every five Americans visit a museum at least once a year.⁸ This number is likely to continue to increase so that, if not already, soon the majority of Americans will visit some kind of museum at least once a year.⁹ Although museums have clearly changed what and how they present objects, ideas, and information, as well as the types of exhibitions and programs they present, the change has not been so dramatic as to totally explain this explosion in popularity. This change suggests a fundamental shift in the public's values and priorities relative to museums, a change in the public's perceptions of the role museums can play in their lives. Whereas as recently as twenty years ago museums were widely considered dusty anachronisms, today they enjoy a high level of public awareness and prestige. It was not so long ago that the vast majority of Americans would rather have been bound and gagged than visit a museum. Today museums rank along with shopping and sports as one of the most popular out-of-home leisure experiences in America.¹⁰ Doubtless, the causes for this sudden shift in appreciation and popularity in museums are many, but we would argue that at the core there is but one thing—learning. Learning is the reason people go to museums, and learning is the primary “good” that visitors to museums derive from their experience. In large part responding to both of these realities, the museum com-

munity currently justifies and boldly promotes itself as a bedrock member of the learning community.¹¹ Yet many inside and outside the museum community privately, and sometimes publicly, question whether any real learning occurs in museums. Do visitors to museums learn, and if so, how do they learn and what do they learn? This book intends to answer these questions. However, as we will soon make clear, the answers are neither simple nor easily investigated. Unlike only a few short years ago, though, they are now answerable.

LOOKING AT SOME OF THE DATA

The place to start, or so it would seem, is with the museum experience itself, where the proverbial rubber meets the road: the exhibition or program. The prevailing model for understanding learning in museums runs something like the following: *Visitors come to museums, look at exhibitions, or participate in programs, and if the exhibitions or programs are good, the visitors learn what the project team intended.* This seems simple enough. You create a quality educational exhibition or experience, add visitors, and, voila, you get learning! Informed project teams have even expanded their notions of learning to include a host of previously excluded dimensions, including changes in attitudes, aesthetic appreciation, and family communication, to name a few. But is it that simple? Let's follow two visitors whom we observed as part of a research effort at the Smithsonian's National Museum of Natural History explicitly designed to test our assumptions about museum-based learning and see whether this traditional model seems to explain what is going on.¹²

Two women in their late twenties enter the Museum of Natural History on a Sunday morning in early fall. They begin by walking up to the elephant in the rotunda. After a brief pause there, they obtain a map at the information desk and head for the dinosaur and paleontology exhibitions. They quickly make their way around the dinosaur exhibitions, stopping occasionally to read a few labels here and there. For example, one of them seems particularly interested in the head of the *Triceratops*. After about ten minutes they exit again by way of the rotunda and, checking their maps, head down the escalator to a temporary exhibition on spiders. They spend about fifteen minutes in *Spiders*. Sometimes they watch other groups interacting with exhibits, and sometimes they interact with exhibits themselves. Most of the time, the two women stay together and look at the same exhibits; occasionally they drift apart and look at exhibits separately. Next they go back up the escalator and walk through the other

temporary exhibition at the museum, *Ocean Planet*. This exhibition they view at about the same pace as *Spiders*; total time in the exhibition is also about fifteen minutes. Next they briskly walk through the various vertebrate exhibits on birds, mammals, and amphibians, briefly pausing at a few scattered exhibits but never for more than a few seconds. They take the elevator up to the second floor and very quickly walk through the *Geology*, *Gems and Minerals*, and *Insect Zoo* exhibitions. Ninety minutes after entering the museum, they are ready to leave.

Before they leave, we conduct an open-ended interview, inquiring about why they had visited, what they had discovered that was new to them, what they had found interesting, and a whole series of other questions designed to understand their personal experience within the museum. One of the women chooses to talk about the *Spiders* exhibition and the *Insect Zoo*. She says the *Insect Zoo* was her favorite exhibition area. When asked why, she says, "Just because of the way it was set up. There was a lot of interactive stuff, and I liked how the designs kind of incorporated the walls . . . and cages." The other woman says her favorite exhibit was *Ocean Planet*; however, she finds it difficult to give a specific reason other than saying, "Conserving the ocean is important." When questioned further, each is able to give one or two specific examples of new tidbits of information they learned. For example, one comments on how surprised she was at the diversity of spiders and how interesting some of their webs were. She also volunteers a comment on the dinosaur exhibition, saying she had learned about the shapes of some of the aquatic dinosaurs. When probed about the *Triceratops*, she says she really found the size of it remarkable. The other woman mentions that she enjoyed all the exhibitions and thought that the quality of the displays was quite good. Other than these few comments, neither woman has too much to report. The only mention made of any of the exhibitions seen in the last half of their visit, the period when they were "skating" through the museum, was the one woman's comments about the design quality of the *Insect Zoo*.

So, what did these women learn? If you are an optimist, you might conclude that they clearly came away with a greater appreciation of spiders, their variety and adaptability (although they didn't exactly say this, it could be inferred); at least one also seemed to have a richer sense of the size and diversity of dinosaurs. Also, one of the women seemed to have her commitment to ocean conservation reinforced. If a pessimist, you would be justified in concluding that these two women learned precious little in their ninety-minute visit.

However, this is not the end of the story. Five months later we telephoned each of these two women, and among other things, we asked