The socio-cultural perspective, suggesting that the museum experience must be viewed as a complex whole, makes research difficult. Conclusions about learning in museums based on experimental design research are not much different. In summarizing what is known about learning in museums from such studies (besides the ergonomic factors listed previously), Bitgood et al. (1994) include the following from Boutourline and Weiss's conclusions, suggesting that unraveling the complex interplay of factors that make up visitors' experiences will be difficult no matter what research orientation is applied. The last point is quoted directly from the original article (Weiss and Boutourline 1963:26):¹

- Complex, difficult concept exhibits get visitors' awe and respect but not comprehension
- Different styles of exhibits elicit different ways of responding, and adults and children respond in different ways
- Exhibits function best when they relate to visitors' prior interests

* "Effective communication of knowledge, as distinct from creating of an experience, is a very difficult task within the museum situation." (Bitgood et al. 1994:76)

When researchers' attention shifted from measurement of learning—the degree to which the museums' messages are understood by visitors—to examination of the meaning that visitors make of exhibits, models developed to describe learning changed. McManus (1991) and Bicknell (1995) have suggested that museum communication should not be depicted
as a linear process but as an interactive one where both the exhibition and
the visitor contribute to the communication. Falk and Dierking (1992)
proposed that the “interactive museum experience” consists of an
overlapping of personal, social, and physical context to produce the highly
varied actual experiences visitors have in museums. Perry (1992) has argued
that a successful museum experience that leads to learning includes six
factors:  
- Curiosity—The visitor is surprised and intrigued.
- Confidence—The visitor has a sense of competence.
- Challenge—The visitor perceives that there is something to work
  towards.
- Control—The visitor has a sense of self-determination and control.
- Play—The visitor experiences sensory enjoyment and playfulness.
- Communication—The visitor engages in meaningful social
  interaction.
(Perry 1992:9)

Viewed from these perspectives it becomes clear that visitors do
“make meaning” in museums; they construct an understanding from what
they see, touch, and manipulate. Often this understanding differs from the
intended “learning” at the exhibition, but it is related to it and comes from
attending to the exhibitions. Although visitors seldom read labels,
components of label copy appear in their conversations, and the topics of
the exhibition form some aspect of their expressed thoughts; although
visitors may take paths through exhibitions different from those intended,
they purposefully view objects and make associations among what they see;
visitors’ conversations are about the exhibits and families engage in
extensive “learning” activities; although visits are only marginally intended
to educate, memories of the visit are full of detail concerning the exhibits
viewed and affect visitors’ future actions.  

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In addition, through exposure to objects and designed exhibits, visitors can make new connections, expand their thinking to reach different levels of awareness, and change conceptions, despite the evidence that conceptual change is rare and difficult. Museums are particularly effective in providing novel, interactive settings where children and adults can encounter striking, unusual and surprising objects and settings, thus capitalizing on the learning potential of “cognitive dissonance” (Festinger 1957/1962). The unique qualities of museums that can lead to disorientation and inattention can also be exploited to support novel, surprising, and disconfirming experiences, now recognized as crucial for conceptual understanding. In order to facilitate learning, not only do the distracting characteristics of unfamiliar settings need to be overcome (both by making the environment friendly and inviting and by recognizing that visitors need time to orient themselves and need as much assistance as possible in doing so), but exhibitions also need to provide intellectual and cultural “hooks” that permit visitors to connect with the exhibitions.

Learning can only occur when visitors can connect to what they already know, can make an association between what they bring to the exhibition and what is presented. Thus, visitors respond favorably to art museum labels that personalize the artist and the works of art, children engage in “fantasy play” at science centers, and families reconstruct their own histories and personal connections with the events illustrated at historic sites.

According to George E. Hein, contrasting “world views” of research lead to different categories of answers to questions about what we know about learning in museums. But the sum total of the research carried out in this century, with increasing fervor in the past two decades, does suggest some general conclusions.
1. People “learn” in museums. Whether, learning is narrowly defined as absorbing specific pedagogic messages contained in exhibits or more broadly defined to include responding to the experience of a museum visit, there can be no doubt that visitors “learn” in museums.

2. People have enriching, stimulating, rewarding, or restorative experiences in museums. They learn about themselves, the world, and specific concepts; they have aesthetic, spiritual, and “flow” experiences.

3. In order to maximize their potential to be educative, museums need first to attend to visitors' practical needs; degree of comfort influences the value of the museum experience. Comfort includes orientation, providing amenities, making the museum’s agenda clear, and always maximizing the possibility that the intended interactions between the content of the museum and the visitor be appositive as possible.

4. People do attend to exhibits—they incorporate the content of museums into the agendas they bring with them, and their social interactions, attention, fantasies and feelings include, and often focus on, the content of museums.

5. People make unique, startling connections in museums.

6. Museums are not efficient places for traditional “school” education, learning specific facts and concepts, because people don't spend enough time and are not there primarily for that purpose.

7. Staff should never underestimate the value of wonder, exploration, expanding the mind, providing new, cognitively dissonant (intellectually shocking), and aesthetic experiences. Museums can do this well and these are an integral part of “learning.”

8. For visitors to have a positive experience, their interaction with the contents of the museum must allow them to connect what they see, do and feel with what they already know, understand, and acknowledge. The new must be able to be incorporated into the old.
This connection between what visitors bring with them and new experiences is crucial and must be negotiated by each individual whenever new experiences are encountered. This is key to developing situations where learning can take place. Unless the new can be incorporated, either because the visitor already knows enough about the subject to simply include the new into existing frameworks or because the visitor has sufficient other frameworks so that the new can be accommodated by adjusting what is in the mind, the new will be rejected or not observed. But humans also possess amazing memories and can recall events and experiences years later, although the event that initiated them may have seemed trivial or incomprehensible at the time. Thus, even an unusual or unfamiliar experience in a museum, one that is intellectually inaccessible at the time of the visit, may contribute to later enlightenment.\(^7\)

Constructivism provides the most comprehensive and elegant theory to consider how visitors can both use their previous beliefs and knowledge to construct new meanings and how they can actively carry out this process. How museums can go about maximizing the possibility that visitors will make rich, profitable meanings out of their museum experience is the subject of this research.\(^8\)

New technologies offer us a series of instruments to develop the potential of human beings with the goal of increasing the quality of life of millions of users of interactive systems in our global village. The relationship between the triad computer science, quality design and communicability has proven very productive in the new millennium.\(^9\)

In the current era of qualitative communication, the present virtual space is intended to be a meeting point of all those who freely wish to boost and perfect the set of strategies and techniques to improve the human–computer interaction, tourism and cultural heritage. The main goal is to
facilitate communicability and make the fruition of the new technologies more pleasant.10

By 1984, the first signs of a technological revolution were already evident with structural changes that continue to shape how we communicate and engage with others and will still shape our interactions in this century. While these expectations are not quite as extreme for older audiences, they are inevitable for younger audiences simply because they have come to expect it from every single entity that they encounter. And that expectation has toppled industries and economic models in many information and entertainment fields from record labels, rock bands, telephone companies, Yellow Pages publishers, classified ads, stock brokerages and travel agencies. It’s unlikely that the progression will stop.

It is highly probable that this structural shift will change expectations for museum engagement as well:11

- Already, Google, YouTube and Flickr have established themselves as museums of the digital world and are actively trying to redefine the idea of curating content. Who knows what emerging entities (Web 3.0? Web 10.0?) will encroach even further on the traditional (and future) functions of museums?
- According to research by the Institute for Museum and Library Services, 43% of museum visits in 2006 were remote, predominately via museum websites. This percentage is likely to rise, and the content of remote visits to museums will continue to shift from basic information gathering to more complicated forms of engagement.
- Museums and exhibit planners already confront questions about whether some aspects of the museum experience should be delivered entirely in digital format, if only to reach different audiences. These questions will not go away. Digitizing collections and other assets is a relatively simple challenge compared to what’s ahead. While it is
hard to predict the likelihood and impact of technical breakthroughs, our interviews with technology visionaries point to advances in processing power and virtual rendering that will push us to view and engage with representations in entirely different ways.

Museums confront many decisions about the collection, presentation and preservation of new forms of virtual objects. Meanwhile, as the world continues to go digital (and progressively virtual)—and as the cost of storage, distribution and processing power continues to plummet—people find themselves further divorced from the real. Yet the fundamental human condition responds to a variant of Newton's Third Law of Motion: The prevalence of the digital, virtual world raises public awareness of the increasingly rare world of non-digital assets that help tell the story of how humans got where we are. Museums play a more critical role than ever as purveyors of the authentic, addressing a human desire for the real as the wonders of technology march us towards the opposite path.12

In an increasingly atomized and digitized world, people still have a core desire for human engagement and authenticity. Museums will be oases of the real in an increasingly virtual world. Along with the outdoors and places of worship, museums represent the best opportunities for getting away from it all.13

Museum communication systems such as exhibitions, public programs, outreach and education seek to provide complex cultural interactive experiences. This interaction is framed within the convergence of various disciplinary phenomena including visual communication, media studies, collection and cultural studies, cognitive science, human computer interaction, behavioural studies, screen studies, visual, spatial and temporal design techniques. Social media are a growing issue in the museum environment as they challenge existing communication models, and few
museums have clear strategies for engaging communities in content creation. Additionally, museum bureaucracies can present barriers to the kind of agile business processes which could leverage social media. The ability for an individual to create and display content within an authoritative cultural environment - such as a museum - reflects a growing global interest in the sharing of individual and collective experiences. It also represents changes to the ways in which users interact digitally using different communication models:14

- one-to-one (i.e. user to user);
- one-to-many (i.e. museum to user - web pages and blogs);
- many-to-many (knowledge to knowledge - wikis).

Historically, the one-to-one and one-to-many communication models have provided the framework for authoritative cultural knowledge as provided by museum programs. This authority is historically derived from the primacy of object collections and the patrimony of the museum in their storage, display and interpretation. The recognized authority which museums have within the community provides audiences with the means to interpret history and science, which in turn justifies the use of mediated representations of artefact and culture (Thomas 1998:1-18). The outcome of this cultural transaction has traditionally placed museums as provider of both authoritative and authentic knowledge. Such authenticity is critical to the post-museum environment in which social media allow for the evolution of a many-to-many communication model. This shift in cultural practice, while initially seeming to undermine the primacy of objects, can provide significant interpretative knowledge. The notion of authenticity - as provided by the museum - organizes collections of narratives into recognizable and authoritative histories, mediating the relationship between visitors and objects. Social media can extend this authenticity by
enabling the museum to maintain a cultural dialogue with its audiences in real time.15

Another example which predates social media technologies but illustrates some of the characteristics of a many-to-many communication system is the Collections Australia Network (CAN). CAN aggregates collections from museums, galleries and other organizations Australia-wide. Focusing on small collecting organizations, usually in regional Australia, CAN offers accredited and sanctioned tools, thesauri and preservation tools with which untrained community contributors can properly document objects. In doing so, CAN provides tools which are often beyond the financial and technical reach of regional galleries and museums (which are often run, staffed by volunteers, and poorly funded). Regardless, many of these communities wish to preserve their heritage, stories and narratives and often partner with CAN (and larger museums) for assistance in carrying out preservation in a ‘professional’ and ‘effective’ manner. The CAN example demonstrates how a museum might not necessarily be willing to democratize its collections via community engagement, but can still extend its professional practices into the community (see also Sumption 2000 and 24hrmuseum.org).16

CAN illustrates how museums have used the online environment to share the knowledge, stories and narratives which both they and other museums have within their collections. As CAN continues to evolve, small organizations have a lot to gain from the accessibility and low infrastructure cost of social media which may offer them new ways to tell local stories and remember histories. In the most recent Collections Plan (2006), the Collections Council has identified networks and collaborations as one of its three priority strategies. Networks are seen as both physical and virtual and offer “a means for supporting and resourcing those who work with collections, for linking collections with other collections, for connecting

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communities of audiences and users with collections, and for stimulating collaborative projects" (CAN 2006, 16). Partnerships with CAN and other larger museums ensure that these relationships are built upon a solid foundation laid upon professional preservation and record keeping practices.17

Both examples demonstrate the groundwork for the inclusion of social media in museum programs. Each uses audience interaction and engagement as a vehicle to strengthen museum authority. In each case, the product of the interaction does not change the purity of the 'record' or the museum knowledge; rather it adds community knowledge in different formats to that record. Examples such as these go some way to addressing the question of how far the museum is willing to relax its authority. It appears that while social media do not oppose museum expertise and knowledge, they can provide a vehicle for scholarly debate. At the same time, community knowledge can be shared across museum networks suggesting that communication and audience interaction may take on different currency in the social media environment.18

In the post-museum environment where cultural participation through museum learning gains increasingly greater importance, such communication precedents hint at how audiences and communities could work in partnership with museums to extend both the knowledge situated around the collection record and the reach of that information. While museums have used their outreach and education programs to innovatively involve audiences in cultural knowledge and exploration both online and offline, social media networks provide a significant and possibly more efficient way of “making public” the ways in which audiences respond to cultural content. The two examples above demonstrate how social media can facilitate many-to-many communication through their recognized role as custodian of cultural content. So how do social media affect museum
communication and learning experiences? How far is the museum willing to promote community knowledge over its own? As collections remain at the heart of museums, it may be worth considering the location of meaning in the display of object collections and how this is affected by user interaction and engagement.19

Recently, Trant responded to Style's posting and provided valuable insight into the constantly evolving notions of trust in relation to social media in museums: 'Trust is built on identity; identity requires identification... Trust is also built upon assumptions that behaviour will be appropriate. Assessments of trust require a history of an individual's actions - linking their trace with a distinct identity... Personalization could be a great way for libraries, archives and museums to build connections between collections and individuals, and between people and collecting institutions... Once again, though, we need to realise that we're creating an on-line space that doesn't share all the characteristics of our past space, on-line or on-site' (Trant 2006).20

In the social media environment, one of the challenges for the museum is to ensure that the veracity of information surrounding cultural content is not abandoned. This is not a new challenge but one which is described over and over as emergent systems, technologies and paradigms affect the museum program. Over the past 30 years museum communication has progressed from the 19th century information transmission models used in the early modernist museums, to social constructivist models which acknowledge the experiences that audiences bring with them when visiting the museum (Watkins and Mortimore 1999). This shift has focused on the partnerships between the museum and its visitors in the "making of meaning" (Hooper-Greenhill 2000) and is in keeping with more general evolutions in digital media which describe how different modalities combine to create meaning (Snyder2002).21
From above, the museums of eastern India could try to apply the idea of connecting each other for the collection and communication of symbolic and imagery representation of the Buddha and Buddhist identity in the museums of eastern India. However, our focus in this work is the representation of the Buddha, as the Buddhist identity has been dealt with in details in a different article.22

Keeping a continuous dialogue between museums and visitors intends to avoid oblivion of past and the destruction of the cultural heritage. The digital culture and technology could be useful in reshaping such a dialogue by increasing the visitor’s interest, instigating its curiosity and learning. The visitor’s personal interest could be met via internet as virtual tours of category interest such as selective galleries or collections offered by a particular museum. The museum could as well run online short quizzes and offer ‘free’ visits to those who complete successfully such examinations. This requires that the docent of the museum would take a direct interest in keeping a permanent update of the museum’s website and would inform its visitors through a database specially created for this purpose. The main idea is providing a link between the museum and the visitors by creating awareness of the potential learning facilities that the museum could offer through its educational programs. The educational techniques are continuously improved with the advancement of the neurosciences of cognitive understanding of how learning processes take place. Affective and cognitive processes that help in gathering information are closely related with the way the information is delivered. Keeping the ‘delivery’ of information interesting facilitates leaning and memory and thus contributes to keeping the cultural heritage alive in the common memory of the community as well as in those not directly involved in such groups.
Thus, museum networks would create a virtual relationship between the visitor and any museum, for the purpose of updating the museums information regularly. Such networks are becoming very popular as in the case of the social networks such as Facebook, Twitter, Google, YouTube, etc. Anyone interested in any information could get into this 'Museum Access' and find out any needed information, available in one location.

![Figure 6.1 - A proposed museum network 'MuseumAccess' functioning as between-museums-information dialogue (See text for details)](image)

An example of a museum network is shown in Figure 6.1. As it could be seen, Museum 1, through its docent, would create a database of its visitors and use it in order to update the visitors of its regular activities, exhibitions, new collections, etc. It is supposed to be a mutual dialogue as the visitors too request information of their interest and search for new information that the museum could try to provide.

A rating of the visitors' museum-based-knowledge would allow the docent to classify them from novice to experts and thus to supply the museum information according to their expertise so that the information would not be inaccessible for the novice or futile for the expert.

The network is supposed to work at two levels:
(1) Within-museum network would be based on the docent-visitors dialogue through the database. The docent, on one hand, offers the updating information to the visitors through the database and, on the other hand, mediates the dialogue between the visitor and the museum, by implementing the requests or the interests expressed by the visitors.

(2) Between-museums network, the basis of the MuseumAccess, such as between Museum 1, Museum 2, and Museum 3, continuously gets the information regarding the activities of the museum network. In Figure 2 we offer a fictional daily update of such a network.

In museum based networks, communication of representations is a communication of information processed by museums, a multileveled-narrative process. In our case, it is a story (for the visitor) of the story (of the museum) of the artist's representation/embodiment of a particular concept of the Buddha. It is easily understood that any deficiency at any of these levels would disrupt the wanted communication between the Buddha, as a representation of the artist's concept, and the visitor. For avoiding such fractures in the process we propose in Figure 6.2 a continuous access to information and dialogue between visitors, potential visitors and MuseumAccess network.
Figure 6.2 - A fictional update in MuseumAccess of 3 connected museums (see text for details)

According to our proposal the visitors logging in the MuseumAccess would be at once able to receive and search for the information needed and become acquainted with all the different activities that would take place in any museum connected to the MuseumAccess. The number of the museums connected to the MuseumAccess is unlimited.


4 Ibid.
5 Ibid.
7 Ibid., p. 154.
8 Ibid.
10 Ibid.
12 Ibid., p. 15.
13 Ibid.
15 Ibid., p. 3.
16 Ibid., pp. 3-4.
17 Ibid., p. 4.
18 Ibid.
19 Ibid., pp. 4-5.
20 Ibid., p. 6.
21 Ibid.