Chapter 3

Development of Children: Learning Approaches and Strategies in Museums

After a theoretical discussion of the various facets related to development and learning of children in museum context in the two preceding chapters, this chapter continues to take a theoretical approach and extends to adapt a practical one. It presents practical implications of various theories in terms of approaches and strategies for designing educational programmes for children in museums. The learning approaches and strategies are presented in the light of: Piaget's theory of 'Cognitive Development', the characteristics of language development of children at the age of 3, life skill development and development of knowledge and understanding of principles of conservation. The chapter also includes certain prominent methods of learning relevant to children such as theatre, storytelling, and demonstration, and ends with John Dewey's account of significance of creating positive and educative learning experiences for children in museums. The learning characteristics and key implications for museums discussed here are illustrative, not definitive.

To figure out what can be offered to children the focus needs to be on their needs and abilities. Therefore it becomes imperative to look closely at the theories given by Jean Piaget (Travers, 1982; Grinder and McCoy, 1985; Schaffer, 2004; Keenan and Evans, 2009) because his empirical work demonstrates that the thinking ability of children is qualitatively different from that of adults. Piaget believes that children are active learners and emphasises that their intense curiosity drives them to experiment and

explore their environment. He asserts that 'children must be actively involved and the younger the child, the more important it is that he or she has the opportunity to learn by doing' (Schaffer, 2004: 183). Piaget's theory of 'Cognitive Development' is quite revealing and provides a rationale for child-centered and discovery based learning in museums. According to this theory cognitive development i.e. capacity to reason logically and learn, occurs in a stepwise manner in four distinct stages and children's performance is directly associated with the stage they are in. Piaget (1953: 362) also stresses that 'at every level, experience is necessary to the development of intelligence'. The four stages of cognitive development, as mentioned earlier, are:

1. Sensorimotor stage (Infancy – from 0 to 2 years)
2. Pre-operational stage (Toddler and early childhood – from 2 to 7 years)
3. Concrete operational stage (Elementary and early adolescence – from 7-11 years)
4. Formal Operational Stage (Adolescence and adulthood – from about 11years)

As per the scope of the thesis, focus is confined to the pre-operational stage that talks about children in their early childhood. At the beginning of this stage, by the age of two, internal process of performing tasks mentally begins and children can perform simple mental operations. As these simple operations create the base for solving complex mental problems later in life, the stage from 2–7 years is termed as 'Preoperational'. At about two years of age a defining moment in cognitive development comes with the onset of sophisticated language system which gradually matures as a life-

long process. In the preoperational stage (2–7 years) memory and imagination are developing and intelligence is demonstrated through use of symbols. But thinking is done in a non-logical and non-reversible manner. It is highly egocentric and perception bound. Here egocentric thinking does not mean selfishness. This means that young children perceive the world within their own experience and accept their first understanding of something as the absolute truth. Here are some real examples of egocentric thinking:

Example 1

A child on seeing a goat walking down the streets, asks his mother:

Child: *Where is the goat going?*
Mother: *She is going to her home*.
Child: *Why is she not wearing slippers*?

Example 2

Following is a conversation between a preschool boy and his grown up sister who is observing an earthworm in the rain.

Sister: *Cheeku, Come and see! This is an earthworm. It comes during rains*.
Cheeku: *For a bath*?

Example 3

A preschool child is on a visit to the zoo with his parents. On seeing the birds inside the cage, he compares it with his own house and asks: *Where is the bird's bedroom? Where is his bathroom?*

These examples vividly demonstrate egocentric thinking in children which may appear faulty and foolish to adults but is actually a lawful step towards mature thinking. In view of the egocentric thinking in early childhood, the obvious implication that arises for museums is to introduce new concepts based on their previous experiences. Consider, for example, the way the Museum of Modern Art (MoMA), New York uses concepts with which children are already familiar to explain works of art by Rachael Whiteread, a British sculptor whose works are casts of objects from everyday life. Here is how they explained the work 'Untitled (Room)' (MoMA, 2004):

Whiteread made a cast of a real room! She turned the room into a mold.

> Think of an ice cube tray – that is also a kind of mold. To make ice cubes, you pour water into the holes in the tray and put the tray in the freezer. After the water freezes, you can pop out an ice cube– and the ice cube will have the same shape as the hole in the tray. This sculpture was made in a similar way: the artist used the whole room as a mold. Instead of water, though, she poured in a white material called plaster, which then hardened.

Here the MoMA used an analogy—'A is like B'—by superimposing the similarities of a familiar thing (ice tray) on to a new one (work of art).

Using analogies is a practical and useful method of interpreting exhibits to young children as they tend to find it simpler and easier to learn new concepts by connecting them with their existing knowledge. Analogies are conceived and developed by exhibit designers also. A fine example is the exhibit on 'Memory' in the 'Human Biology' exhibition (Figure 3.1). It explains complex nature of memory by forming connections with familiar things such as 'a leaky bucket (holding things for a short time)', 'a computer (storing masses of information)', 'a sponge (soaking up facts)', 'a diary (helping you to plan ahead)', 'a camera (recording pictures of everything you see)', and 'a maze (in which things get lost)'.

Figure 3.1: 'Memory' in the 'Human Biology' exhibition, Natural History Museum, London

A few more examples are presented to illustrate certain aspects of Piaget's theory:

Example 4

A four year old child takes out her toy lying in the bath tub as she suddenly realises that the toy might catch cold and covers it with a handkerchief. The following is the conversation with the mother:

Mother: *Why have you taken out your toy suddenly from the tub?*
Child: *It might catch cold!*

This example points to a prominent characteristic of preoperational stage called 'animism' by Piaget. It is a result of egocentric thinking and refers to tendency of children to assign humanistic qualities to inanimate things. They believe that non-living things have desires and think, feel and act like them. A logical consequence of animistic thinking is the strong emotional response towards non-living objects—talking to their toys, taking caring of them and expressing their feelings towards them. The implication for museums is to offer small replicas or models of animals or mythical creatures and characters depicted in their collections.

Example 5

This example is based on frequently heard response of young children:

Father: *From where do we get eggs?*
Child: *From the shop.*

This example illustrates the idea that preschool children perceive things on apparent phenomena. They have seen finished products and believe that these things come the way they see them and have absolutely no idea about the processes behind their creation. The key implication for museums is to expand their perception by showing behind-the-scene processes. An excellent example is the exhibit on African Art designed by the National Museum of African Art, Washington D.C. for preschool children (figure 3.2). This exhibit explains how a piece of wood is converted into a work of art in a simple manner.

Figure 3.2: Exhibit on African Art, National Museum of African Art, Washington D.C.

Example 6

Here is another interesting conversation between a mother and child (figure 3.3):

Child: *Ma, whose house is that?*
Mother: *Bird's.*

Child: *These clothes also belong to bird?*

Figure 3.3: An illustration showing conversation between a mother and a child

This example illustrates children's tendency to relate unrelated things. Because of this the child assumes the clothes hanging near the bird's house belong to the bird. Implication for museums is to show things in proper context and be careful in juxtaposing objects. A useful means of showing things in proper context is diorama. The dioramic displays attract viewers of all ages and provide lifelike impression and context.

Piaget's theory reveals many other significant characteristics of concern to museum educators. Two of them deserve mention here. One, inability to

think in abstract terms—children at preoperational stage cannot think in abstract and need concrete examples to support their thinking. For example, telling children that apple is a fruit that is round, red, juicy and sweet is meaningless unless an apple is shown to them. Museum educators need to facilitate their learning by showing concrete examples and objects, and allowing them to see, touch and feel. A number of abstract concepts can be easily communicated to young children by using 'Binary Opposites' i.e. by contrasting two mutually exclusive concepts such as in: out, high: low and hot: cold. Many 'Binary Opposites' such as mountain: valley, white: black, new: old, dark: light, big: small, smooth: rough and hard: soft, can be observed in museum objects and used to teach abstract concepts to young children.

Two, centration—children at preoperational stage are able to focus only on one characteristic of the task at a time. For example, children cannot sort out objects on the basis of size and colour at the same time. They will sort out on the basis of either the size or the colour. Implication for museums is to engage children in simple problem solving activities that require use of single criteria or factor such as arranging according to size or grouping according to colour, shape or characters.

The preceding discussion focussed on children between the ages of 2–7 years at the second stage of Piaget's theory of 'Cognitive Development' i.e. 'preoperational thinking'. It highlighted their key learning characteristics such as egocentricity, animism, centration, and lack of abstract thinking and explained their implications in museum context. Another major characteristic of children at this stage, as pointed out previously, is the onset of language by the age of 2 that sophisticates

gradually. Language ‘provides a means of expressing ideas and asking questions, the categories and concepts for thinking, and the links between the past and the future’ (Das 1995, cited in Woolfolk, 2004: 81). Language is not only an important means of communication, but it facilitates thinking and verbalises thoughts. Children gradually acquire language which matures as they learn their meanings and usage in specific contexts. This process of language acquisition and its subsequent development mainly occurs through listening, speaking, reading, and writing.

Armbruster Bonnie B., Fran Lehr and Jean Osborn (Spring, 2003) have enumerated abilities of children at different stages in the context of reading on the basis of research in the fields of reading, early childhood education, and child development. Characteristics of children at age 3 as given by them are given in table 3.1 with their implications in museums.

The table reveals several important implications for museums and it is abundantly clear that the museum context expands the ambit of learning implications beyond reading and provides many enabling contexts.

Table 3.1: Characteristics of children at three and their implications in museums

CHARACTERISTICS OF CHILDREN AT THREE	**IMPLICATIONS IN MUSEUMS**
Likes reading with an adult on a regular basis	Book reading sessions Adult assisted programmes; family programmes
Listens to stories from books and stories that you tell	Story telling sessions
Recognises a book by its cover	Memory games/Recall activity Identification exercises
Pretends to read books	Do not force children to participate Create willingness Keep variety and choices
Understands that books are handled in certain ways	Introduce concept of safe handling of museum objects
Looks at pictures in a book and knows that they stand for real objects	Produce books based on museum's collection
Says the name of objects in books	Provide recognition vocabulary
May begin paying attention to print such as letters in names	Encouraging children to read Provide recognition vocabulary
Comments on characters in books	Ask for their opinion Initiate simple conversations
Asks an adult to read to him or to help him write	Adult assisted programmes; family programmes
Begins to tell the difference between drawing and writing	Drawing and painting activity Identification of shapes, forms and lines; Pattern making and identification
Begins to scribble as a way of writing, making some forms that look like letters	- do -

Point 1, 2 and 10: Likes reading with an adult on a regular basis; Listens to stories from books and stories that you tell; Asks an adult to read to him or to help him write

Three important characteristics are apparent here. The first, urge to learn language: Children, particularly young, have a powerful urge to learn and acquire language at a prodigious speed to verbalise their experiences – new discoveries, knowledge and understandings. Their language empowers them to imagine, think, and express their feelings and thoughts.

The second, interest in books and stories: Books and stories are a means of exploration of the world. Through them children get vicarious experiences of lives of others who are different from them. Events and characters in stories make them imagine, wonder at the lives portrayed and extend their experiences by developing concepts and values such as caring, helping and learning to appreciate others. Listening to stories and reading of books also leads to development of language.

Combined implication of the first two points is to conduct storytelling and book reading sessions in museums based on museum collections. Our museums are cornucopias of stories related to mythology, history, culture, civilisations, religions, famous personalities and travelers. Through dramatisation and puppetry these sessions can be made highly interesting.

The third, dependency on adults: At the first place, children depend on adults to come to the museum and then for participating in reading, writing and other activities. The obvious implication for museums is to design family (and other multi-generation groups) programmes that engage both

children and adults in a familiar social setting. The value of family programmes is well reflected in the conclusions of research carried out by Hilke (1989: 101) in two different museum environments—one participatory with hands on opportunities and the other traditional hall with exhibits behind glass or railings. The study revealed family 'as a highly responsive and learning system that adopts well to museum environments'. The conclusions of the study recognise several important points. For example (Hilke, 1989: 127):

> [P]arents were rarely observed to offer lengthy interpretations of the exhibit topic, nor did they generally constrain the family's behavior either at or between exhibits. Rather, parents allowed their children to choose topics of their interest, frequently joined with their children in exploring an exhibit of the child's choice, and exchanged with their children comments and questions concerning these explorations.

Point 3: Recognises a book by its cover

Development of memory skills is a part of the development of children and an essential requisite for all aspects of real life. It is the process of receiving, retaining and recalling information when needed. Museums have the strength to introduce and develop visual memory skills through memory games based on their collections. For example, choose an exhibit such as a diorama or a painting and allow children to look at it for some time. Then tell the children to turn their backs and ask about the contents of the exhibit—landscape, creatures such as animals, birds or humans, activities going on and part of the day i.e. morning, noon or evening. If

required, children can be shown the diorama or the painting again and asked to recall the things they missed earlier. Engaging children in activities that stimulate their mind as well as body is essential for developing memory skills. Consider, for example, the exhibit (figure 3.4) in the children's Museum, Brooklyn that makes children focus, concentrate and observe the features of an art object and interact with it physically as well.

Figure 3.4: An exhibit in the children's Museum, Brooklyn

Point 4: Pretends to read books

At times children do not actually read but pretend as if they are reading to satisfy adults. This happens particularly when children are forced to read against their will. It means children's motivation influences the way they participate in learning process. Forcing children to perform tasks may cause an adverse impact on their motivation and also lead them towards reluctance and pretense. This has an implication for museums in terms of creating a learning environment that is informal and playful, and offers direct experience and a variety of choices. Offering multiple activities allows them to select activity of their interest and helps sustaining their interest by allowing them to move from one activity to another if their interest in one activity fades.

Point 5: Understands that books are handled in certain ways

This means that children by the age of three begin to value books and understand that the books are affected by the way of handling—holding or opening a book, turning or holding its pages, and ways of keeping them safely. This leads us to extend their sensitivity beyond books and introduce the concept of safety and conservation by explaining and making them follow museum manners such as: Look but do not touch the exhibits unless told to do so, No running about, Keep distance from the exhibits, and Do not eat or drink in the galleries. Children can be made to learn the concept of conservation easily because due to their 'animistic thinking' they understand that things get hurt the way they get hurt.

Point 6 and 7: Looks at pictures in a book and knows that they stand for real objects; Says the name of objects in books

This refers to the ability of children to recognise and remember images of things they have already seen and experienced. Implication for museums is straightforward: production of learning material like story and activity books with pictures of museum collections. These publications help extending their positive museum experiences. For example, if a child enjoyed an exhibit about lions in the museum, a story book or activity book on lions can serve as a base for follow up activity in their homes. These publications can help children recall what they saw in the museum, expand upon them by asking new questions and discover new fact.

Point 8, 11 and 12: May begin paying attention to print such as letters in names; begins to tell the difference between drawing and writing; Begins to scribble as a way of writing, making some forms that look like letters

This means that children by the age of three begin to learn alphabets, are able to differentiate between drawing and writing and start scribbling which is the foundation of artistic development and written language. By the age of 7–8 they gain clarity and fluency in writing alphabets and drawing shapes. In museums, they need to be given opportunities to express themselves through writing, drawing and painting. They should be provided with variety of art material to engage them in art-making besides looking at art and learning art vocabulary. The focus should be towards exploration and manipulation of different materials and not creation of a finished product.

Point 9: Comments on characters in books

As children's language and understanding of the world around them develops, they increasingly become more expressive and are able to make comments on the characters in stories. Recommendation for museum educators is to engage them in simple open-ended conversations allowing them to express their feelings and ideas about works of art. This can help enhancing their knowledge and honing observation and communication skills.

The foregoing discussion presented the characteristics of children in terms of development of language at the age of 3 with respect to those acquired through reading. The implications were explained with straightforward suggestions for museum educators that can help in enriching the values of learning programmes for children in museums. The discussion reveals that there are multiple implications in museums which are much beyond the context of reading.

Another significant aspect of development of children is the development of life skills. These skills include cognitive, physical and motor, emotional and social abilities. The multitude of such skills that a person needs to possess to deal with the demands and challenges of everyday life is called life skills. The significance of these skills is unquestionable at every stage in life, but their early promotion in childhood can empower children with abilities they need to possess to lead a fruitful and fulfilling life. Childhood plays a significant role in life as the experiences gained, habits learnt and skills acquired early in childhood, leave an impression for life and go a long way to determine the kind of adult one would grow up to be. These

personal attributes also enable children to think rationally, function effectively and act responsibly. To inculcate such skills in children through museums, here are a few suggestive learning activities using museum collections.

Activity 1: Mystery Box

Learning Goals: To promote: 1. Use of tactile senses 2. Linguistic skills - use of identification and descriptive vocabulary and 3. Drawing skills.

In this activity children are given an object hidden in a mystery box with holes on either side to touch and explore the object. Being completely unaware of the contents of the box, through tactile exploration children identify the object and its physical characteristics such as its size, shape, feel and material. Following this, they pen down a brief description of the object and may draw a rough sketch. Finally, the box is opened and children are able to see the real object and match it with their descriptions and drawings. If the identification and description are close to the real object, the experience is delightful and rewarding. However, if it does not match, the child will be able to see the limitations of its description and correct itself.

This activity relies on the descriptive vocabulary of a child. A child lacking descriptive language will not be able to describe the object aptly and may hesitate in participating in the activity. Therefore, it is vital that the museum supports such programmes by providing a comprehensive chart of descriptive words related to different physical characteristics of the object along with their visuals. This chart would serve as a reference during

the activity and assist in choosing the appropriate words to complete the description.

The ‘element of mystery’ in the activity makes it intriguing as well as engaging and holds on the child’s curiosity till the final ‘discovery’. It helps children acquire descriptive language and provides an opportunity to use it effectively. The main stay of the activity is its role in stimulating children’s tactile skills and imaginations. A variant of this game is the activity called ‘Feely Bag’ (figure 3.5 a) where instead of the box, a cotton or linen bag is used to play the game. However, the bag acts as a barrier and limits the tactile experience. This limitation is overcome by using a ‘Mystery Box’ which offers real feel of the object and promotes tactile learning. An experiment was done with the post graduate students of museology in the department who found the game very thrilling and exciting (figure 3.5 b).

Figure 3.5 a: A ‘Feely Bags’

Figure 3.5 b: College students exploring the contents in the feely bags

Activity 2: 'Trash Bin Game'

Learning goals: To promote archaeological skills: make observations, work with fragments, extract information, analyse it, relate evidences, establish relationships, make inferences and draw conclusions; and develop descriptive vocabulary, imagination and creativity.

Based on the concept of 'dumps and pits' in archaeology, which serve as valuable resources for archaeologists to understand and interpret the cultural behaviours of the past communities, this 'trash bin' game is conceived. To play the game, children are given a bin containing waste produced by a family to study its contents like an archaeologist. The trash may include organic leftover food items, fruits and vegetable peels, and inorganic items like used cans, bottles, wrappers, tickets, bills, broken toys, shreds of garments, parts of vessels and other wastes from daily use. These wastes can bring some information about the family members and their

living habits. Below is a list of a few illustrative questions which can serve as guidelines for children and their accompanying adults and assist in collecting information:

Q. What are the clues that suggest that there are adults and children or both in the family?

Q. What are the clues that suggest that there are male, and or female members in the family?

Q. What are the evidences that suggest that there are pets in the family?

Q. What kind of foods are consumed by the family? Does it look like a healthy diet?

Q. Do you think that the family members follow a healthy life style? If not, find clues.

Q. Find evidences which reflect that the family is rich or poor.

Q. What are the evidences that suggest that there is a sick person in the family?

Q. What are the clues which tell that the family is educated or uneducated?

Q. What are the evidences which suggest that the family members engage in hobbies or leisure activities such as travelling, partying, reading, painting, watching T.V. or playing games?

As children try to seek answers to the above questions, they study trash and try to extract information, analyse it, and learn to relate evidences, establish relationships and draw conclusions. However, it is important to bear in mind that while selecting the material for the trash bin, representative material should be used such as synthetically created fruits and vegetable peels, *chapatti* and other foodstuffs to represent organic wastes. Care

should also be taken to choose material that represents various members of the family like some used by adults, young children, older members and pets (figure 3.6).

Figure 3.6: Household trash for 'Trash-bin' game

Activity 3: 'Siva *(Vinadhara)*'—A Puzzle game

Learning goals: To develop listening skills and descriptive vocabulary.

This puzzle game is designed on an image of a sculpture of 'Siva *(Vinadhara)*' from 9th century, Vadaval, North Gujarat (figure 3.7 a). To set up the puzzle, the image of Siva is divided into six parts by horizontal lines (figure 3.7b), without actually cutting it, keeping in mind convenience of description. This image is used as a reference for the game. Then images of three different sculptures are selected comprising one of Siva and two other sculptures having similar physical features, and are cut into six pieces

based on the division of the original Siva's image (figure 3.7 c). To play the game, children are divided into two teams; 'Team 1' comprises six members and the remaining go to the 'Team 2'.

Children in 'Team 1' receive the reference image of Siva *'Vinadhara'*, while the remaining eighteen jumbled strips of the three sculptures including one of Siva, go to the other team. Both the teams get some preparatory time to scan and study the images and get ready for the game. During this time, each member of 'Team 1' selects one part which s/he wishes to describe; they discuss among themselves and prepare their verbal descriptions. Beginning with the child who receives the top most part, each child takes turn and describes the part of the image moving in order from top-to-bottom. On the basis of this verbal description, members of 'Team 2' match the description to the parts with them, select the appropriate one and try to fix these together to construct the complete image of Siva *'Vinadhara'*.

The whole game of describing the image, matching the verbal description, and using it to fix the parts of the sculpture together, enhances children's speaking, listening and descriptive skills.

Figure 3.7 a: Original image of Siva *'Vinadhara'*

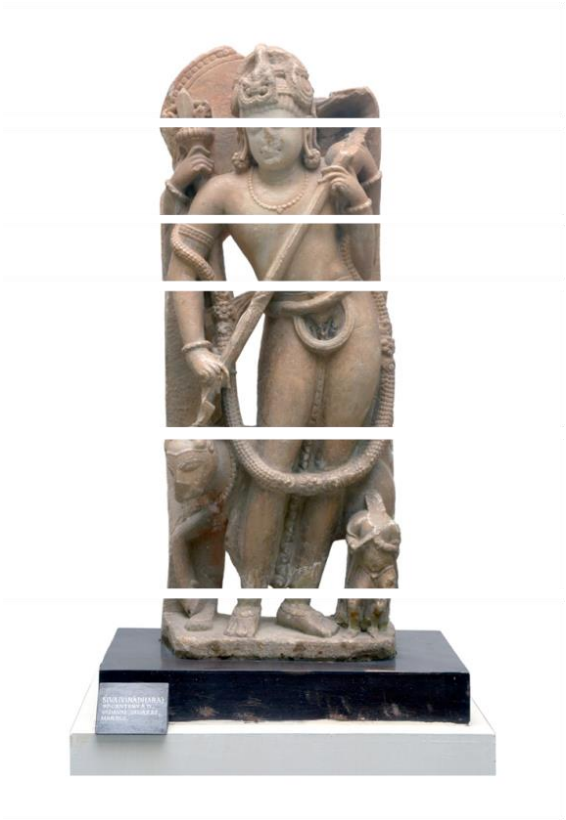

Figure 3.7 b: A divided image of Siva *'Vinadhara'*

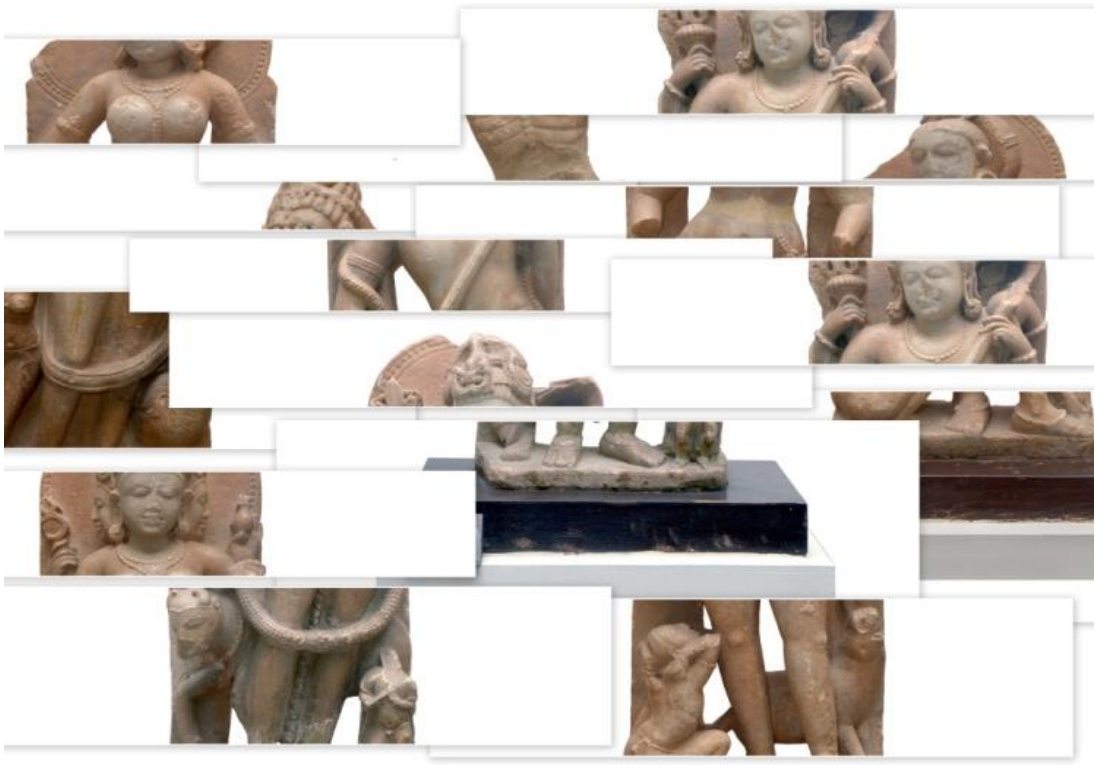

Figure 3.7 c: Jumbled strips of sculptures including Siva *'Vinadhara'*

Activity 4: A Game on Classification (Coins)

Learning goals: To enhance skills of classification: observing the similarities and differences, choosing and applying a criteria and grouping.

Grouping objects on the basis of their similar features is a common activity that helps children grasp the basics of 'categorisation or classification'. In this game, children are given a collection of coins (figure 3.8 a) or any other object of different shapes, materials, symbols and sizes (figure 3.8 b), and are asked to classify using a criteria of their choice. Care should be taken while giving this activity as children between ages 2–7 can classify using a single criteria, while as they grow (ages 7 up), their ability enhances and are able to classify using two or more criterions simultaneously. Participation in this activity develops logical thinking in children as they

learn to observe, make comparisons and sort out materials. This activity can be further supplemented by a talk to familiarise children with different cultural symbols and provide them new vocabulary as they get introduced with different identification terms.

Figure 3.8 a: Ancient coins for classification

Figure 3.8 b: Mix archaeological materials for classification

Activity 5: Memory Game

Learning goals: To develop skills of memorising, visual observation, and expressive communication.

Memory games are a great memory booster for very young children. To begin with, children are shown a photographic or dioramic scene from the life of the early man; they are asked to observe the scene carefully and minutely and after a few minutes, the scene is removed (figure 3.9). A facilitator then takes over who asks questions about aspects such as persons, animals, plants, time of the day and activities that were going on in the scene. Children recall the facts and try to answer these questions and describe the scene. This description may be oral, written or in an illustrative form. After the completion of the question answer session, children get a chance to see the scene once again to verify the information that missed their attention. The scope of this game can be further expanded by showing two scenes instead of one and asking children to spot the differences between the two scenes. Whatever medium of expression is employed, the game develops children's skills of observation, concentration, visual memory, and expressive communication.

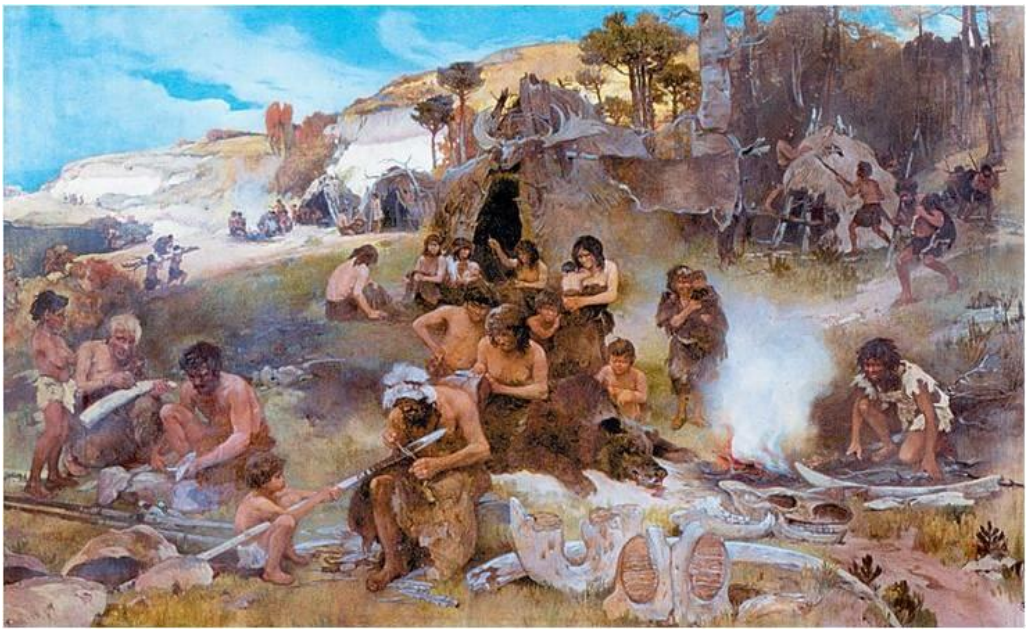

Figure 3.9: A hunting scene for ‘Memory game’

Activity 6: Spot the Odds—History in Contemporary Times

Learning goals: To develop skills of understanding, observation and analysis of differences between modern life with that of the bygone era.

Here, children receive an image of prehistoric men inside a cave dwelling (figure 3.10 a). To this image, a few elements from the modern times are added; such as a wheel, clock, light bulb, telephone and written script (figure 3.10 b). The elements are deliberately chosen as their invention has marked turning points in history and have had a profound influence on the evolution of human kind. However, the background landscape remains unaltered as it gives historical clues to children to ‘spot the odds’. Children try to identify these ‘odd’ elements which don’t seem to match with the prehistoric times.

The game can be a starting point to introduce the concept of early man and prehistoric times to very young children as in no time they are able to identify the apparent differences in the appearance, clothing and life style of the early man and the modern man. It also stretches children's imagination and creativity as they begin to ponder how drastically different was the life lived by their ancestors some five thousand years ago in the absence of these basic objects that so naturally fill our life today. The game is also a test of young children's observation and analytical skills as they compare, relate and mark out the differences between the things that they see in their vicinity with those representing past.

Figure 3.10 a: Conjectural image of a prehistoric cave

Figure 3.10 b: Modified image of the prehistoric cave

Apart from the inculcation of life skills, the collections in museum can also be used to impart knowledge and understanding of conservation, and preservation of cultural heritage. The educational programmes in most of the museums in India focus on imparting subject knowledge inherited from the collection. This focus can be shifted to introduce sensitivities among people, particularly children, about heritage preservation and conservation. Heritage management which includes preservation and conservation of cultural property is a broad field that comprises initiatives undertaken to

create awareness, impart knowledge and understanding, and develop an attitude in people, particularly children, towards safeguarding through steps such as safe handling, avoidance of vandalism, and imparting historical knowledge and significance, besides the actual physical measures of conservation and security. To discuss how educational programming strategies can be employed as an effective medium to sensitise children about heritage preservation, and assist in safeguarding it for posterity, here are few supportive examples of educational activities for children using museum collection. These educational games reflect an alternative approach to preserve heritage and in particular fulfil the underlined purposes:

- To provide concepts and vocabulary related to conservation and preservation
- To help children understand how objects or materials get damaged
- To inform what they should and should not do to protect heritage

Activity 7: Conservation game

Learning goals: To impart knowledge and understanding of the importance of safe handling, concept of human vandalism; the differences in the nature of different museum materials and their proneness to deterioration.

For this game, children are given an assortment of museum objects such as an old photograph, a piece of cloth, a white paper, a clear plastic, and a glass object (figure 3.11 a). To play the game, two sets of materials are needed; one set is given to the children while the other is retained. Without telling the children the purpose and reason of the game, they are allowed

to freely handle and explore these materials (figure 3.11 b). Once children finish handling, they are given hand gloves and the first set of materials which was retained. They now compare the second set of materials which they handled with the original set to observe and identify the changes, both through the normal eye and a magnifying lens (figure 3.11 c). At this point, they share their observations with the facilitator and are told about the principles of safe handling. They are told about the significance of careful handling through avoiding improper usage which leads to wear and tear of precious museum objects. Children are also explained the significance of wearing hand gloves while handling museum collections as dust and dirt from hands get transferred to the objects and leave stains that further accelerate the process of deterioration (figure 3.11 d).

** Suitable for 8–10 year olds; requires adult supervision*

Figure 3.11 a: An assortment of museum objects for the ‘Conservation Game’

Figure 3.11 b: Step 1—Unaware of the intent and purpose of the game, children freely handling and exploring materials

Figure 3.11 c: Step 2—Children wearing hand gloves, observe and identify the changes after handling through a magnifying lens

Figure: 3.11 d: Step 3—Children being explained the importance of safe handling and significance of wearing gloves to avoid deterioration, with supportive examples

Activity 8: Spot the difference

Learning goals: To introduce children to the basic concepts of conservation; inculcate concept of aging that occurs over a period of time.

This game requires old and new materials such as: an old and a new digital camera; an old black and white photograph and a new coloured photograph; an old used coin in which the inscription is damaged (details are smudged) and a new coin of mint quality; an old archival document and a fresh new book. Children compare the two sets of the old and new materials, try to identify the differences between them and classify them into two groups. To further their knowledge about the concepts of aging and deterioration, both naturally occurring phenomena, children are shown a set of photographs of a child since birth till grown up. They observe the

physical differences, relate them to their own life and try to understand the concepts deeply (figure 3.12).

Figure 3.12: Children trying to understand the concept of aging and deterioration through a set of photographs of a child since birth till grown up, in relation to their own life

Activity 9: Matching Game

Learning goals: To promote conservation vocabulary, observation and problem solving skills, and provide an artistic and aesthetic learning experience with a work of art.

In this game, children receive an image of a painting which carries an array of conservation problems. These problem areas are numbered and encircled to give children a clue for identification (figure 3.13 a). Children also receive a corresponding list of these conservation problem terms

which they try to match with their corresponding numbers as marked in the given image. The game can be played at two levels of complexity for different age groups of children.

At level one, children try to identify and match the image with their corresponding numbers (5–7 year olds) (figure 3.13 b). At the second level, children receive the names of the problems with their factors of deterioration, and identify and match these with their corresponding numbers as marked in the painting image (8–10 year olds) (figures 3.13 c and 3.13 d).

* *Requires adult assistance and supervision*

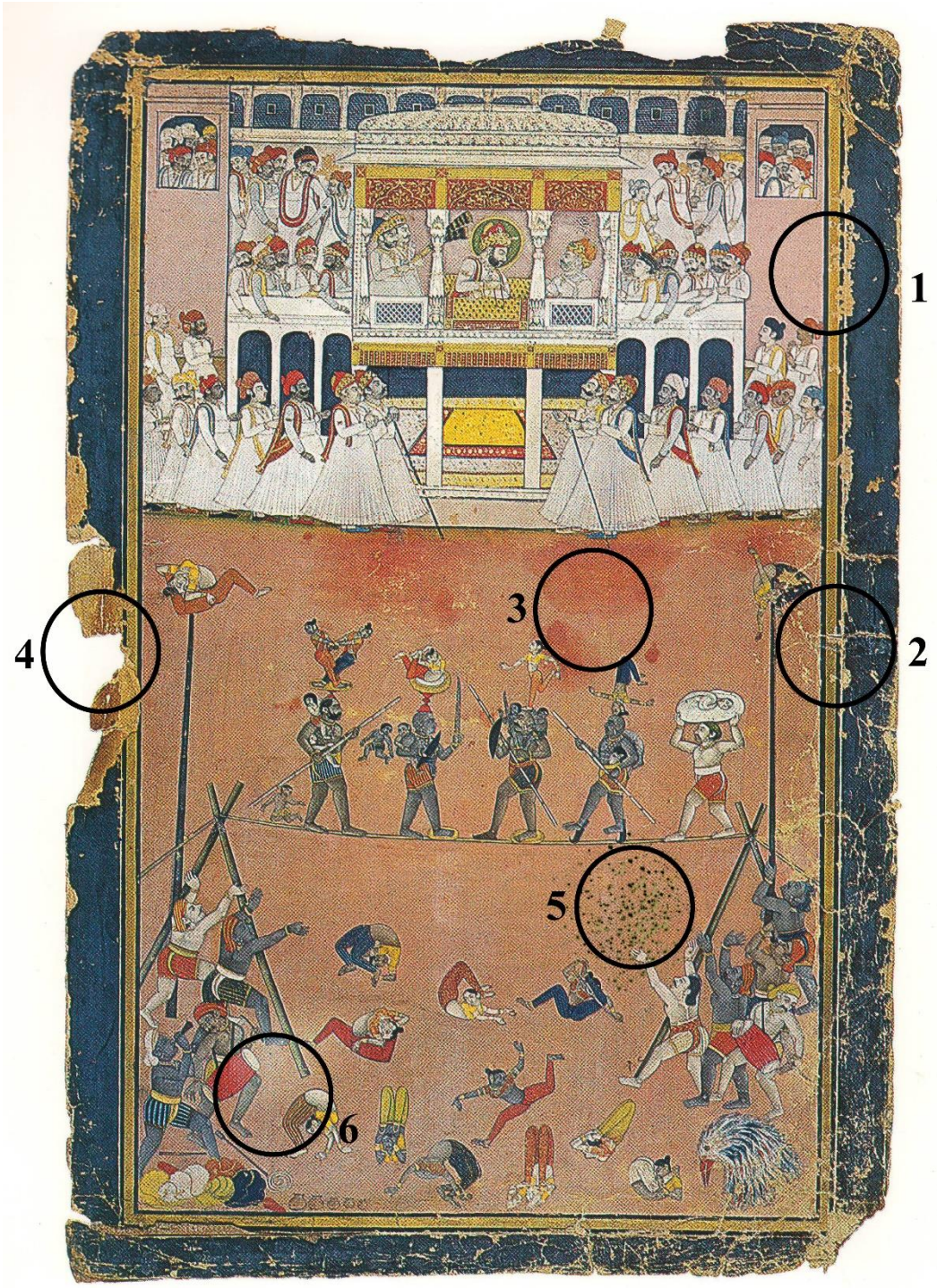

Figure 3. 13 a: An image of a painting carrying an array of conservation problems which are encircled and numbered (source: Doshi, 1995)

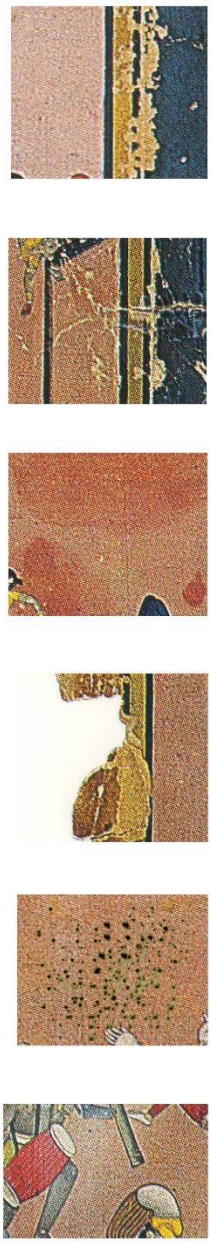

Figure 3.13 b: Activity sheet with the corresponding image of conservation problems for identification and matching (level one: 5–7 year olds)

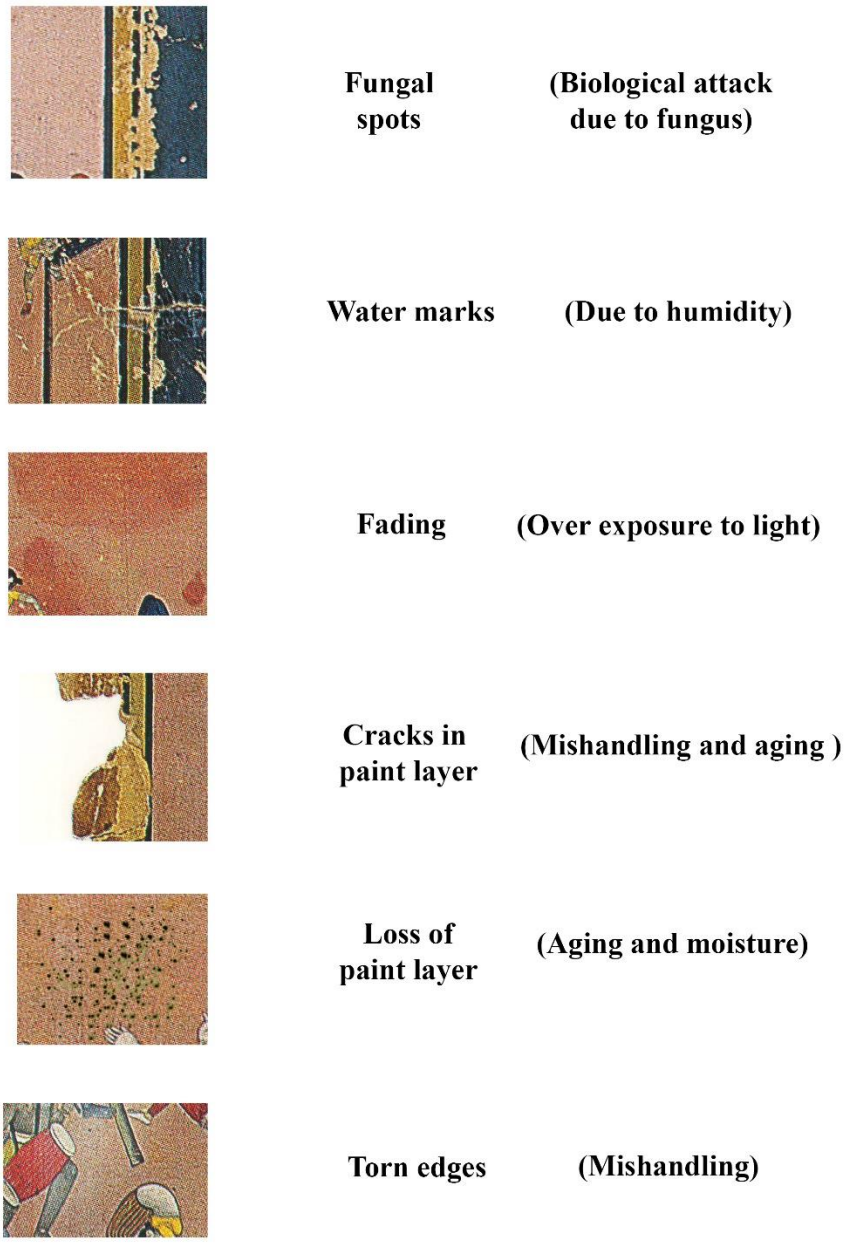

Figure 3.13 c: Activity sheet with names of the conservation problems with their factors of deterioration, for matching and recognition (level two: 8–10 year olds)

Figure 3. 13 d: Children solving the activity sheet

Activity 10: Find the missing part (Sculpture)

Learning goals: To familiarise children with the role of a restorer and conservator; to tell them about the significance and importance conservative treatment; to exemplify the effect of aging and mishandling that cause damage to artefacts.

In this game children receive an image of a sculpture in which some of the parts have been restored while some are still missing. Children try to identify these repaired and damaged portions. At this juncture they have not seen the sculpture and just work with the given image. At the next step they are shown the actual sculpture and are able to relate this experience with the exercise they had performed previously. They also get oriented with the importance of conservative treatment practiced in curative conservation while treating works of art keeping in mind the aesthetics and to avoid complete alterations in the appearance of the art work.

Figure 3.14: A reference image of a sculpture (Shiva *'Vinadhara'*) with encircled areas showing restored and missing parts (Source: 'Museum', Department of Museology, M.S. University of Baroda.)

Activity 11: Arrange the given folios (manuscript)

Learning goals: To impart knowledge about biological agents of deterioration, factors of deterioration, and promote skills of observation, identification, investigation and problem solving.

In this game children arrange the folios eaten by termites in order by following the movement pattern of termites which appears in a tunnel form. To facilitate their understanding, children are also shown images of termites in books and videos and some examples of wooden objects infested with termite from real life such as in a door, window and the bark of a tree. This is to be done keeping in mind the learning needs of children for concrete examples to develop an understanding of their surroundings. As exemplified through several examples previously in the chapter, abstract thinking is primarily absent in young children and develops with age. Abstract thinking is a common characteristics in adults and flows from their experience of life situations.

Activity 12: Pattern making

Learning goals: To develop skills of: fine motor, problem solving and pattern making. To impart knowledge about ancient times and Harappan pottery.

This game is particularly designed keeping in mind very young children and includes a pattern making exercise which children generally perform in play schools. In this game children receive an image of a Harappan pot (figure: 3.15 a) from which the design has been removed partly and at some

places replaced with dots and lines (figure: 3.15 b). They try to complete the missing details by joining the dots and filling in details in the left over areas on the basis of the pattern in the given design (figure 3.15 c).

To simplify the level of difficulty for even younger children of 3–4 years, children are given just the outline of the pot and they try to fill-in any design of their choice. The concept of this game 'comes from closure, a concept in Gestalt theory which suggests that we will mentally complete any incomplete pattern. For example, a diagram of a circle with gaps in it will still be pursued as a circle' (Carter, 1996: 194).

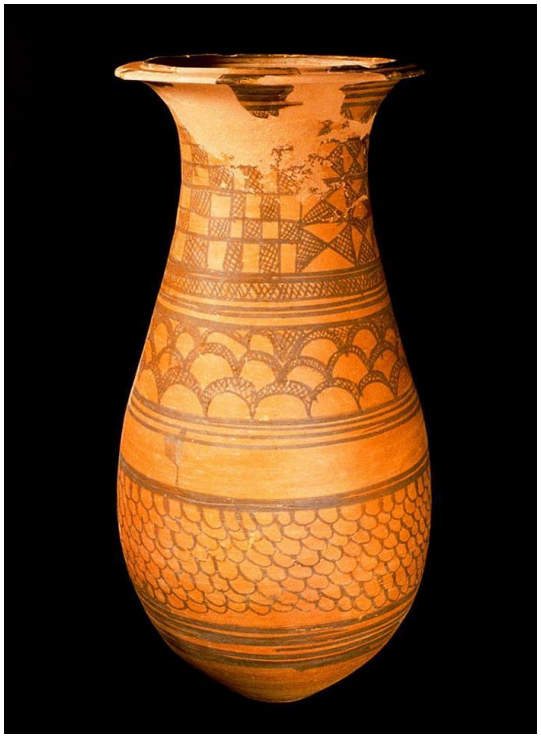

Figure 3.15 a: An image of a Harappan pot for designing the 'pattern making' exercise

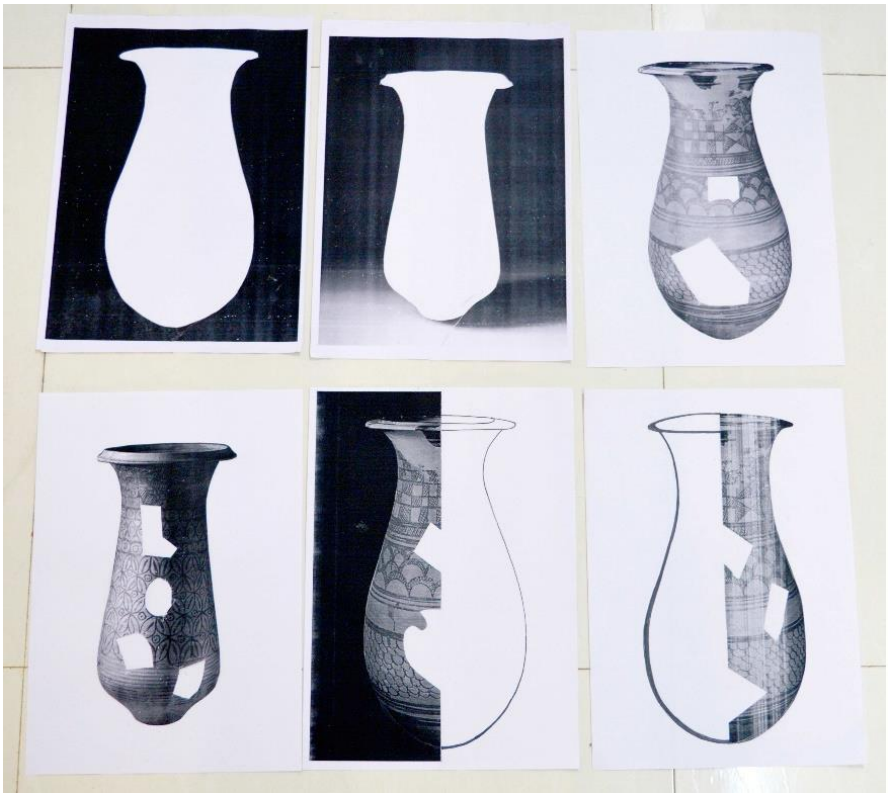

Figure 3.15 b: The variety of activity sheets created from image of the Harappan pot

Figure 3.15 c: Children performing the ‘Pattern Making’ exercise

The preceding discussion throws light on the tremendous potential that museum collections have to contribute to the development of life skills, knowledge and understanding of principles of conservation in children, and ultimately to their overall development. All the activities suggested to illustrate instilling of these sensitivities are in the form of games which primarily use play-based approach. Here it would be prudent to elaborate the play-based approach for learning in museums as play is an integral part of the lives of children. All children engage in some or the other form of play. Play normally involves self-directed, self-initiated activities undertaken for enjoyment and pleasure. Besides the scientifically assessed benefits of play, it is always preferred for its spontaneity and vigour. Almost all books of child development and psychology mention about play, its benefits and role in development. For children it, 'serves as a means of learning about and making sense of the world' (Essa, 1999: 37). Children explore their world by engaging in play. They learn about objects, people, places, and the various mechanisms of life through play.

Gyroscope Inc. (2005: 10) enumerates the following characteristics of play:

- Spontaneity
- Active engagement in activity
- Absorption in task
- Intrinsic motivation
- Being free of consequences

The above five characteristics are the salient features of play. Play is spontaneous as participating in it is mostly an impulsive act without much of planning and preparations. It is unpredictable, unrestricted, and not

bound by ‘reality or instruction’ (Gestwicki, 2009: 35); ‘play is both doing and becoming. It is in the moment and should be valued as such’ (Wilson, 2009: 3). Play involves activity and complete absorption in it. While playing children are so deeply engrossed in the activity that they often lose control and track of everything else, including themselves and things in their surroundings. Children engage in play activities when they are internally motivated. If someone from outside forces children to play, the fun and enjoyment dies down and the activity becomes coercive. It can thus be termed as ‘work’ or ‘drudgery’ (Hurlock, 1997: 291). Children themselves define the rules for their play and keep them flexible all through. The most significant characteristic of play is its ‘process oriented’ nature (Gestwicki, 2009; Wilson, 2009). While playing, the means remain important and the consequences or the end result bears no significance. This implies leaving play to ‘the innate wisdom of children and allow[ing] them to get on with it’ (Wilson, 2009: 3).

Children, by their very nature, ‘co-create’ play from anything, anywhere, with anyone and almost everything possibly they can lay their hands on. Play is also preferred for the freedom, exploration and adventures which open up novel experiences for children. Considering its developmental significance, its deprivation can be detrimental to overall growth and development of children. Penny Wilson (2009: 15) in the *‘The Playwork Primer’* gives statistical evidences to state that play deprivation can make children ‘socially aggressive and emotionally depressed . . . physically desensitized, show symptoms of severe learning disabilities, physical ineptitude, or erratic behavior, be depressive and withdrawn, or have difficulty in forming bonds’. Wilson further states that it is an investigated

fact that people deprived of play during their childhood years often turn out to be future criminals.

Sensing the need for play in the lives of children, the Manchester Museum, UK, under the *'happy museum project'*, has recently developed a *'Rules For a Playful Museum'* (2009) which is based on the museum's experiments with play and driven by the Article 31 of the 'UN Convention of the Rights of the Child'. The book acknowledges the fundamental rights of children to play and is grounded on the museum's philosophy of encouraging play based learning. It describes the qualities that a playful museum could aspire to have and further enlists twelve principles of play which are devised to promote greater appreciation, and acceptance for children's play among adults in social spaces such as museums. The book is a suggestive document of ideas and principles that can be adapted by any museum which aims to cater to children but in a light-hearted manner. It also fosters an understanding of the conditions that can be created within museums for play based learning.

Besides the inclusion of 'play-based' approach that can make activities in the museums enjoyable, another approach which is successfully applied by museums is 'art-based' learning. The relationship between art-based learning and various aspects of development of children has always been of great interests to educators and other professionals. Ann M. Galligan, A.M. (December, 2001), National Endowments for the Arts (2004), National Endowment for the Arts (2004) and the College Board for the National Coalition for Core Arts Standards (January, 2012), discuss at length about this relationship and the accruable benefits, from a formal perspective. In India, the National Council of Educational Research and

Training (NCERT) that designs curriculum for Indian schools, in their 'Position Paper' by the 'National Focus Group' (2006), also take a similar standpoint and discusses it from an Indian perspective; laying emphasis on orienting children with the rich and diverse Indian culture. The above sources include visual and performing arts in art-based education. Visual Art includes drawing, painting, art and craft activities, sculpture, printmaking, photography, filmmaking and architecture. Performing Art includes dance, drama, and music (vocal and instrumental). Though museums have been using both these forms of art-based learning approaches, examples of visual arts activities are more in number. Some examples of performing art based activities in museums are discussed here.

THEATRE

All the methods of education in museums have some impact on the learner, but the impact varies significantly. It is therefore important for museums to devise a learning strategy based on those methods that maximise learning outcomes. One such strategy is the use of theatrical performances. Theatre is the best method to build connections with all types of learners and provide highly satisfying experiences. Through effective presentation of ideas, theatrical endeavours can create a multisensory experience and are hence more engaging than any other method of education.

Theatre is a place or building where people gather to watch performances such as drama, dance, music and demonstrations. These performances take place on a stage in the background of a contextual setting. In museums theatrical performances are being used for interpreting history and heritage through individual and group performances using period settings,

collections and paraphernalia such as clothing, tools and furnishings. These activities can be performed by museum's own staff, hired professional actors, contemporary artists, traditional craft-persons, archaeologists and scientists. Even audiences, particularly children, can be involved by way of role playing. On the basis of the approaches, museum theatre can be of the following types.

Interactive Characters

This refers to performance by an individual who plays the role of a person from past or present in a contextual setting. In a historical recreation, the performer adopts the name and persona from the period portrayed and does not understand references to the later times. They draw visitors into his/her period by initiating conversations and encouraging them to discuss various aspects of life. The characters portrayed may be actual or representative fictional characters such as a station master, soldier, housewife, an innkeeper, housemaid etc. Such historical interpretation is also called living interpretation, living history or live interpretation. Some examples of interactive characters representing past or contemporary cultures are given here.

MRS. PERKINS AT, APSLEY HOUSE, NO. 1 LONDON: Aplsey house was the home of the first duke of Wellington, who lived here about 160 years ago. Housing his magnificent art collection of paintings, porcelain, silver, sculpture, furniture, medals and memorabilia, this is one of the finest residences and hence is famously known as 'No. 1 London'. Mrs. Perkins, the housekeeper to the Duke, invites children who are willing to work as servants in the Apsley House. She explains them about the mannerism i.e.

how to stand, speak, dress-up and present themselves, their duties and wages (figure 3.16 a). Mrs. Perkins also tells them how well she expects the work to be done. Sometimes children are also given costumes of servants. Then she takes children around the House and explains about various areas in the house and also how certain works such as cleaning the carpets and handling the crockery need to be executed (figure 3.16 b).

Mrs. Perkins approach combined with the magnificent interiors of the house make the tour particularly stimulating, effective and exciting. Through role play and discussion, children learn about the Victorian age, how others lived and how to approach historical enquiry. To support this activity, activities like 'Plan a Banquet', 'Telling Tales with Pictures', 'Writing Letters Home' and 'Fit for the Duke' are also undertaken to discover and develop the historical, artistic, art appreciation, literary and numerical skills in children.

Figure 3.16 a: Mrs Perkins interacting with children before the guided tour, Apsley House, London

Figure 3.16 b: Mrs Perkins showing children the various areas in the house and explaining them their jobs, Apsley House, London

MRS. MARKS: A WOMAN WITH A PAST: In another living history portrayal, is enactment of actual character of Mrs. Marks, who settled on land adjacent to Cleveland Metro Park Reservation during the early 19th century. She belonged to a history of pioneer families and illustrates many aspects of early settlement in the region. She tells people about herself and narrates stories about rattlesnakes and mud holes which come from an actual settler's account of journey to Michigan in 1830's.Visitors to the park see her dressed in a long red dress and wearing a checked apron and a white cap. She is spotted cooking stew, carrying water and collecting hazel leaves throughout the park. She interacts with the people on trail and serves them a cup of sassafras tea.

PALESTINIAN OLD LADY: National Museum of Man, an integral part of the British Museum, London, arranged an exhibition on Palestinian culture in the early 90's. As a part of educational programming, a Palestinian lady used to enact as an old Palestinian woman. Dressed in traditional outfit she

welcomes groups of school children to the activity room arranged in a cultural setting with representative objects, photographs, costumes etc. After greeting the children in traditional Palestinian style, she introduces herself and then starts narrating stories about her life. Beginning with childhood she gradually comes to her marriage and invites children to celebrate the occasion. Children are divided into two groups representing families of the bride and the groom. They wear costumes and head gears and meet and greet each other. Then the ceremonies are performed. Dry fruits are served accompanied with music and dance in the background. Through this interactive educational activity, the children get the feel of Palestinian culture and learn about the Palestinian hospitality, cultural symbolism and practices.

Plays or Drama

This technique usually involves more than one character who enacts an event from past in a predetermined sequence. The actors perform according to a script that normally excludes visitor interaction. Visitors are expected only to view the drama to gain an understanding of the past in an enjoyable manner. An example of drama is on the life of Thomas Alva Edison. As a part of their educational programs in the year 1980-81, the staff of VITM enacted a drama for school children on the life and inventions of Thomas Alva Edison. Few of the important incidents of his life were enacted by the staff. Thomas Alva Edison (February 11, 1847–October 18, 1931) was an American inventor who developed many devices that greatly influenced life around the world, including the phonograph, the motion picture camera, and a long-lasting, practical electric light bulb. Some of the important incidents of his life were depicted.

Cultural Performances

Cultural performances are also theatrical activities which museums have been doing since the last half of the 19th century. Initially A typical museum laid emphasis on objects and specimens rather than people thus making them static and forbidden places for general public. Gradually the focus shifted to the visitors. By including cultural performances many museum has become a community cultural centre. Types of activities such as music shows, concerts, dance festivals, cultural performances emphasise on enjoyment of visitors whereas demonstrations aim to teach people how to perform an activity which encourages verbal interactions too.

Realising the power of theatre in education, a Discovery Theater was established for children at the Smithsonian Institution. Since its inception in 1979, it has been doing live performances for young audiences in its boutique theater designed by professionals. They conduct all kinds of activities—living history portrayal, drama, puppet shows, demonstrations, festival celebrations, and music and dance performances. Some of the activities performed are given.

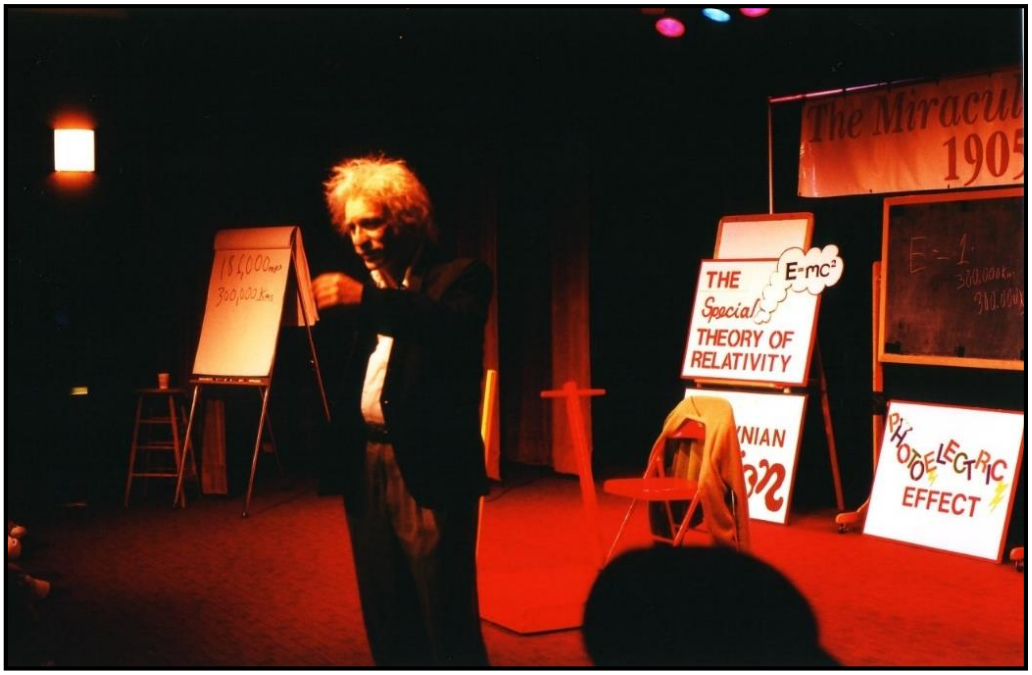

Figure 3.17: Marc Spiegel enacting as Einstein, Discovery Theatre, Smithsonian Institute

'Einstein: The Miracle Year'- In 2005, on the completion of 100 years of E=mc2 American artist Marc Spiegel enacted as Einstein and shared and interacted with people about his life. He also took teaching sessions for school children and explained the theory of E=mc2.

'Dinosaur babies' is a puppetry show for children that takes them to the era of the dinosaurs and is followed by a treat after the show.

The Emperor's New Clothes' is a Grey Seal Puppet's Production of the classic tale. This is a comedy participatory puppet show in which the emperor becomes a pig.

Some of its programmes also go on tour like 'Black Diamond! Satchel Paige and the Negro Leagues, and 'How Old is the Hero?' about young people involved in 1960's Civil Rights Struggle. Such activities are

conducted on a regular basis and further information can be gained from Discovery Theatre's calendar of events available on their website.

Theatre can be performed by children through activities such as role play. Children by their nature enjoy performing roles performed by adults. Through simple role play games such as playing the part of a teacher in a classroom, a doctor, postman, historical personalities such as Mahatma Gandhi, Jawaharlal Nehru, Subhash Chandra Bose they can learn about history, great personalities and also empathetically understand adult behaviour. Theatre, like other creative arts, provides opportunities for self-expression. It develops skills such as time management, organising, directing, co-coordinating, controlling, public speaking, disciplinary and linguistic skills. Through such role endeavours, children learn to judge, evaluate situations and solve problems. This can enhance their creativity, cognitive thinking and ability to analyse, encourage and appreciate others.

In spite of its several benefits, using theatre has certain limitations. Theatrical performances are scheduled as the interpreters are not available all the time. Hence all the visitors might not be equally benefited. Doing research, setting up of stage or performance area, assembling needed materials, recruiting and training the actors can all be quite expensive. If professionals from outside the museum are hired, then cost involved might be very high. Hence, every museum may not be able to afford it. If the museum's staff is involved, then it might also affect their regular activities. Besides, in interpretive characters, if first person approach is adopted, visitors may not comprehend the language of the other period. Aspects like these need to be considered before including theatre but the idea of using theatre in museums should not be rejected simply on the basis of these

limitations. By undertaking activities such as live interpretation, drama, demonstration and cultural performances, museums can work in all the three domains of learning i.e. cognitive, affective and motor and accomplish its educational objectives.

STORY TELLING

Another method which is particularly relevant for children is story telling. A story usually takes a narrative form which typically is 'a chain of events in cause-effect relationship occurring in time and space' (Bordwell and Thompson, 2004: 69). According to them, a narrative would thus include:

- A chain of events: This means a sequence of events that happen one after the other.
- A cause and effect relationship: It refers to the relationship between two events or happenings. A cause generates an effect.
- Time: The relationship between events with respect to the past, present or the future. It is also called the time-frame and may occur in the order of their occurrence (chronology).
- Space: Relationship between events with respect to physical background and context. It defines 'where' the events occur (Bordwell and Thompson, 2004: 80).

Other important elements of a story are plot, characters and narrative point of view. A 'plot' or 'storyline' is the actual events or happenings which are apparent or explicit, and relate the cause and effect. 'Characters', which may be real or imaginary, are 'the agents of cause and effect' (Bordwell and Thompson, 2004: 72). These are the links that mediate the occurrences

in a story. The ‘narrative point of view’ refers to the perspective adopted by the storyteller or narrator to communicate the events in a story. It could either be: first-person narrative—when the storyteller is a character or participates in the story, or third-person narrative—when the storyteller or the narrator is not a character in the story and conveys the events or happenings as happened to others. While using the former approach the storyteller uses ‘I, me, my, mine (singular form), and we, us, our, ours (plural form) as pronouns, while in the latter, ‘he, she, it, him, her (singular form), and they, them, their (plural form) may be used. Further, a story may be either a fiction or non-fiction. Fiction stories contain non-factual descriptions based upon the imaginations of the author or storyteller. The variants found in museums are: fable, fairy tales, folklore, historical fiction, legend, mythology and science fiction. Non-fiction stories on the other hand are factual description of real things, events or happenings. The variants found in museums are: biography, autobiography, and historical narratives.

Story telling is the means through which the events or happenings, real or imaginary, are communicated using words, sounds, gestures and expressions. In museums, storytelling can be used as a technique to generate connections between the visitors and the content. Stories by themselves are interesting and storytelling has far reaching effects on its audience. Different stories can have different purposes but in general, a story can generate the following benefits:

- Aids in disseminating knowledge about collections of the museum and related subjects
- Presents ideas and thoughts in a delightful way

- Important means of tapping and holding the attention of listeners
- Fostering bonds between storyteller and listeners by connecting people
- Contributes to overall development of children by:
    - Stirring up emotions, imaginations, and creativity
    - Allowing children to express ideas and emotions
    - Promoting new vocabulary, ideas and pronunciation
    - Stimulating thinking
    - Promoting listening and communication skills
- Develops historical awareness and understanding
- Boosts up their curiosity to learn about the outer world
- Creates positive attitudes towards stories and books, and helps in improving reading skills

Story telling as a practice has existed since ages. It has helped in transferring knowledge and experience from one generation to the other. But if used strategically, it can pass on wealth of knowledge encompassed in our museums.

Below is a list of tips which can help in improving the impact of stories:

- Know the story well
- Select a story that suits the age and interest of audience
- Use simple language
- Message to be conveyed should be clear
- Practice several times before actual session
- Use appropriate tone, voice and intersperse with proper gesture
- Use interrogative approach to stimulate thinking

- Be observant in catching cues to know the impact
- If possible, use multimedia to prolong attention
- Present things in a convincing manner

Outcomes of Storytelling and Bloom's Taxonomy of Learning Objectives

The learning outcomes from storytelling are many and can be studied in the context of Benjamin Bloom's Taxonomy of learning objectives, as discussed in ‘Chapter 2: Learning: Basic Concepts and Principles in Museum Context’. The table 3.2 illustrates the various levels of the taxonomy with the original terms (as given by Bloom) using story telling as an example:

Table 3.2: Outcomes of Storytelling and Bloom's Taxonomy of Learning Objectives

Bloom's Objective	**Underlying Concept**	**Activities: During and immediately after Story telling**
Knowledge	Observe, recall and remember	- Listening attentively - Remembering the story - Naming and identifying the characters and main events
Comprehension	Grasp, understand and translate meaning	- Recollecting facts - Finding the main ideas in the story - Restating the events in own words - Locating places on a map - Comparing any two characters - Showing relationships
Application	Use information in a different context	- Encouraging questions - Predicting the events or consequences in the story - Reconstructing the story in the a different time zone - Writing a poem or drawing an event from the story - Enacting a play/ dramatizing
Analysis	Break information into parts to understand it	- Discussing the story - Classifying the characters on the basis of their characteristics - Suggesting an anticlimax to the story - Preparing a flowchart of events - Analysing the characters or main events of the story - Analysing the behaviour of a character - Justify the character of a person in the story
Synthesis	Use old ideas to create new ones; in-depth criticism	- Producing a sequel to the story
Evaluation	Compare, discriminate and assess	- Critically assessing the events and justifying opinion

Storytelling in Museums

In recognition of the strengths and benefits of storytelling, there are several examples of museums which employ the technique of storytelling in their educational programmes. The National Museum, New Delhi often includes 'storytelling' sessions in their educational activities for children. Their stories, both fictional and non-fictional, are mostly designed around the museum collections with the aim to impart the knowledge inherent in the objects. For example, the 'Playtime at National Museum, May, 2015', an annual summer camp, included three story telling sessions:

1. 'Lama the animal from Ancient America'
   Age: 7-10 years with family
   Duration: 45 minutes
   Theme: Stories in the Gallery
   Group size: 40

2. 'Krishna'
   Age: 7-11 years
   Duration: 45 minutes
   Theme: Stories in the Gallery
   Group size: Open to all

3. 'Ganga' Udbhav avam katha
   Age: Open to all
   Duration: 45 minutes
   Theme: Stories in the Gallery
   Group size: Open to all

Of the three, the session: ‘Lama the animal from Ancient America’ used two fictional characters—Tica a young girl, and Llama, an animal similar to camel from South America, to help children understand the Pre Columbian cultures of past and also about the life and culture of present day Peru. The story was created around the Pre-Columbian Gallery in the museum and an object ‘Canopa’. Canopa is a stone carved sculpture in the shape of Llama which was used by the natives for making offerings to God. The children go on a walk-through the Pre Columbian gallery and make an imaginary adventure trip to the country of Peru where they listen to the delightful adventures of Tica and her pet Llama.

The ‘Kahani Karnival’, a children’s literature festival, was organised by Bhau Daji Lad Museum, Mumbai on 16th-17th January 2015 in collaboration with the Kahani Karnival Trust (www.bdlmuseum.org, 2015; www.mid-day.com; www.mycity4kids.com, January 2015). The event in its second year, was a two day programme that brought ‘stories alive’ to children in a lively and unconventional way (figure 3.18). It involved around 25 storytelling sessions of multidisciplinary nature. There were stories being read by authors themselves from the books, enacted through puppetry, played through games, doodled through cartoons, and enacted through theatrical and musical dance performances. Some of the sessions were: ‘Bash with Trash, Dhara Ki Kahani, Clay Play, Clap and Rap, Land of Far and Beyond, and Myth and Movement’. It also included school visits to the museum where the pupils could interact with the authors and other artists, explore the museum’s Mumbai Galleries on a walk-through to learn the evolving typography, and know the story of Mumbai—a cluster of seven islands, or participate in the workshop ‘Museum and Me’ on the then ongoing temporary exhibition by artist Atul Dodia: ‘7000 Museums: A

project for the Republic of India'. In the words of Tasneem Mehta, Director of the museum, who considers the event as an a important addition to the outreach activities of the museum: "Kahani Karnival is an ambitious project, which aims to bring stories, of all kinds to life through books, theatre, art, music and dance" (mid-day, 2015). The literary cultural festival revolved around the idea of 'stories everywhere', aimed to spread the joy of reading to children and eventually succeed in bringing around 1500 participants to the museum in two days (www.bdlmuseum.org).

Figure 3.18: A story telling session at the 'Kahaani Karnival 2015' Bhau Daji Lad Museum, Mumbai

Nottingham Castle Museum, Nottingham, UK, lays heavy emphasis on storytelling (figure 3.19 a). Its main gallery: 'Every Object Tells a Story'

aims to reveal the hidden stories in museum's collection. One of the gallery label displays the following information (figure 3.19 b):

- 'Some objects tell of their birth at the hands of their maker.
- Some objects tell of their birth at the hands of their maker.
- Some tell of their working histories — who used them, how they were used, and why they were valued.
- Some tell of the meaning they have for us now'.

Besides, the museum also employs the technique of storytelling in their 'Robin Hood Gallery' that shares the adventures of Robin Hood, and the Nottingham City Gallery that tells the evolutionary journey of the city and of the Nottingham Castle.

Figure 3.19 a: A descriptive catalogue revealing stories hidden in objects, Nottingham Castle Museum, Nottingham, UK

Figure 3.19 b: 'Every Object Tells a Story' Gallery, Nottingham Castle Museum, Nottingham, UK

PUPPETRY

Another means of enhancing the impact of stories is through puppetry. An example of representing characters from folk stories is 'Kabundi' (Mayfield, 1993: 6), a character taken from the Zairian folklore tradition by the Museum of African Art. Kabundi is a gazelle, known for his cleverness and intelligence. Kabundi is personified through a puppet that works with the assistance of a docent. The docent first welcomes the children, asks if they have ever visited a museum and if they would like to meet Kabundi. After a resounding 'yes', Kabundi emerges from a home - away- from- home, a beautiful basket lined with richly coloured cloth.

Kabundi then takes over the tour in a number of ways. He ‘speaks’ through the docent in a character voice, or he ‘speaks’ through the docent’s own voice. Sometimes he ‘whispers’ his thoughts into the docent’s ear. He tells the children about their purpose of visit to learn about the African culture, works of African artists and the purpose of keeping the works inside the protective cases. Following this he tells the children to draw the objects in the collection. After this, the children are encouraged to locate their drawings and talk about the work. This helps them to observe the details of works such as pattern, texture and colours which might have been otherwise overlooked. Kabundi was designed and produced by Education Specialist Leasa Farrar-Frazer**.** He is popular for creating a warm and friendly atmosphere for children to have fun and to learn in.

VENTRILOQUISM

The technique of puppetry can be made more interesting by using ‘Ventriloquism’ in which a person (a ventriloquist) changes his or her voice so that it appears that the voice is coming from the puppet. Such performances are common on television but are not seen in Indian Museums. Being more realistic, as compared to the traditional puppet shows which are like drama; they can enthrall and captivate the visitors immensely. Since the ventriloquists are professionally trained, they need additional relevant subject training to perform in museums. But museums can surely initiate and use this art to enhance the impact of museum learning.

The preceding discussion described storytelling as a mode of learning in museums. It reflected on its meaning, important elements and examined its

benefits particularly for children. Further, the learning outcomes from storytelling were discussed in the context of Bloom's Taxonomy of learning objectives to comprehend how stories can contribute to different levels of thinking in children. To illustrate this, examples of activities based on storytelling from various museums were included. These examples vividly demonstrate how storytelling can be used effectively to engage children emotionally and intellectually. They also suggest ways in which museums can be innovative to expand the scope of the technique by including other forms of art such as puppetry, dance and theatre, to bring out the mysteries hidden in their objects.

DEMONSTRATION

A method of learning relevant to children as well as adults is 'demonstration'. Demonstration is a time proven technique of interpreting history. Since the beginning of 20th century, museums have been trying to be public oriented in their approach and have been exploring new ways of serving the society. They have used activities such as dramas, concerts, cultural festivals and puppet shows to make museum visiting enjoyable and memorable experience. Demonstration is one such popular method that has been used by museums for the last hundred years or so. In 1910 in England, an official 'guide demonstrator' was appointed at the British Museum (Benjamin Ives Gilman, 1984). In 1920's Norwich Education Committee appointed H. J. Howard, as 'museum demonstrator' to teach at the Castle Museum (Greenhill, 1991). In 1967, Molly Harrison, Curator, Geffrye Museum, London emphasised the use of demonstration as a powerful method of education in museums. On the basis of her experience she wrote that:

To most people demonstrations are far more attractive than talks and those museums which have provided series of craft demonstrations for the public have usually had an enthusiastic response. Everybody likes watching other people doing things, and when the 'doing' is perhaps a comparatively simple process which was once current but is now little used; it is all the more revealing.

She further observes that: 'When we watch somebody making things our fingers often itch and we want to try ourselves, so demonstrations can lead to audience participation of one kind or another' (Harrison, 1967: 77).

Demonstration is regarded as a highly effective method of education as it makes learning engaging, intelligible and clear. In museums, activities such as making of various arts and crafts and cooking of traditional foods; and use of musical instruments, equipment and objects of day to day life are explained well through demonstration. Science museums are employing this method to demonstrate basic principles and phenomena of science and their application. They organise science demonstrations for school children based on school curriculum such as properties of liquids; principles of heat; elements, compounds and mixtures etc. They also conduct demonstrations for common people to dispel obscurantism, superstitions and to inculcate scientific temperament and attitude.

Demonstration is a method by which an educator with the help of various tools and equipment practically shows how to make, do or use certain things. It should not be confused with experiments. Birendra Kumar and B. S. Hansra (2000) have made an important distinction between the two. According to them, demonstration is showing proven techniques to reveal

the procedure of doing whereas experiments are trying new ideas under artificial conditions. This is an important distinction which clearly explains the difference between demonstration and experiments. Demonstration can be classified in two broad categories: personal demonstration and non-personal demonstration.

Personal Demonstration: Personal demonstration is one in which the demonstrator is present in person to practically show and explain the process himself. It is a live performance where there is ample scope for direct interaction with the demonstrator. The viewers are free to ask questions and clarify doubts. Personal demonstration can again be subdivided into two types. One, demonstrations offers opportunities for the viewers to repeat the activity. Here demonstration is accompanied with 'hands on' learning experience. The participants learn by way of imitation which enhances the impact of learning and offers scope for correcting misconceptions. Two, the demonstration is a simple process depiction with no 'hands on' learning experience. Here only the demonstrator is physically active and the audience passively views the performance and simply interacts with the demonstrator.

Non-personal Demonstration: In this the demonstrator is not present in person to perform the activity. An effort to educate is by way of recorded programmes in the form of films or videos. Here the audience can only see the process but cannot interact with the demonstrator. However there are several advantages of non-personal demonstration. One, museums particularly in India do not have many educators who can demonstrate frequently and repeatedly. Two, the cost of hiring the demonstrators can be saved upon. Three, preparation of films involves one-time-expenditure.

Once ready, multiple copies can be generated; repetitions can be done and also played at multiple locations at the same time.

What makes demonstration a popular method is that it works for people of all age groups and in all the domains of learning—cognitive, affective and motor. Russell K. Grater (1976) enumerates its benefits:

- It offers the visitor an opportunity to see one or more phases of the story as well as hear about it.
- It encourages questions.
- It holds visitor attention. Seldom does one find the visitor indifferent to a good demonstration.
- It can show the involved story when the oral description would be inadequate.
- It shows clearly how something is done.
- It shows clearly how something works.

A demonstration offers a multisensory experience (figure 3.20). People can hear, see and experience something happening in reality. Some demonstrations can involve other senses also. For example, a cooking demonstration can evoke the smell and taste buds too. In essence, a demonstration stimulates interest, makes people relate and connect personally to the information presented and helps them retain learning. It is a well-known fact that people tend to remember more when they see and do things than just by reading.

The method of demonstration is being used by some of our museums. For example, Indian Handicrafts and Handlooms Museum, Delhi invites craft-persons from various parts of India on regular basis who demonstrate their

crafts such as block-printing, weaving, pottery, terracotta, bronze casting, embroidery, and *Madhubani* painting. Indira Gandhi Rashtriya Manav Sangrahalya, Bhopal also organises such demonstrations. Chatrapati Shivaji Maharaj Vastu Sanghrahalaya, Mumbai uses demonstrations periodically to show the process of making *Pahari Miniature* Paintings and art of Origami. But most of these museums are showing living traditions only. Demonstration has a lot of potential to show techniques used in the past and also explain cultural objects and symbolism. For instance, making of stone tools and their uses; different types of pottery making; making of seals and sealings; casting, punching and stamping of coins; techniques of bronze casting such as *Cire per due;* playing of ancient games and musical instruments and so on. Various styles of writing can also be explained such as use of stylus to write on palm leaf manuscripts and writing of ancient scripts such as *Brahmi* and other regional scripts. Another very important demonstration could be of historical battles. Large size battle scene could be created showing geographical terrain with position of armies and small scale figures of soldiers. The strategies used by different commanders of the armies can also be explained using such model.

Figure 3.20: An educator in period costumes demonstrating the process of embroidery

Figure 3.21: An archaeologist showing the process of flint tool making

Figure 3.22: An artist showing the process of making Pahari Miniature Paintings CSMVS, Mumbai

Figure 3.23: Demonstration area in the exhibition gallery of Air and Space Museum, Smithsonian Institute, Washington D.C.

Organising a demonstration involves a lot of planning from conception to execution. The answers to the following questions can help in anticipating the learning outcomes, resource requirements and help in eliminating problems at the time of execution. For conducting a successful demonstration following questions need to be answered:

What is to be demonstrated? This refers to the process that we intend to show and explain. That means choosing a topic that is related to the subject areas covered by the museum and is of interest to the museum visitors.

Why we are demonstrating? Answer to this question will define the purpose of demonstration.

Who shall do the activity? This refers to the person who will be responsible for doing the activity.

When and where the demonstration is going to take place? That means deciding the venue and timings of the activity.

How are we going to demonstrate? This implies collecting and arranging information about the process to be shown, tools, equipment, personnel and methods which would be used.

Answers to the above questions provide basic information about the activity to be conducted. However it poses several challenges. Foremost is authentic information about the themes to be demonstrated and availability of tools and equipment. This demands serious research and efforts on the part of the museum. In many cases original tools and equipment may not be available and museum shall have to fabricate them. Another important consideration is that educational activities such as demonstrations, drama and cultural performances need to be considered while planning a museum or an exhibition. These activities are resource-intensive and need various resources including space. Space is such a resource that if provision for it is not made at the time of conception, it may become difficult to get suitable

place for conducting the activity at a later stage. However museums should not be discouraged by these and look forward to its dual advantage. One, it can enhance the activity quotient of the museum, serving as a draw for visitors. Two, dispel the myth that museums are boring by offering enjoyment filled experience.

As a coda to the chapter, it will be useful to revisit the ideas of John Dewey, and assess how significant those ideas could be in the museum context. Dewey's ideas about nature, continuity and quality of experience, which stress on the creation of positive and educative experiences on a continuous basis, and what he told to the educators about the importance of creating a conducive learning environment, have already been discussed in Chapter 1. Direct implication for museums is a disciplined approach of experience management, one that focuses on providing holistic experiences. It takes into account various aspects related to visitors and the entire consumption situation. It manages visitor experiences through creation of consistent and coherent frissons of surprises and excitement. It makes a visitor sense, feel, think and do, and sets a virtuous circle in motion when visitors move from one exhibit to next and to the next and so on. In essence, the holistic approach to experience leads to a stimulating learning environment that can generate life-long interest in museums. This view is supported by research findings. For example, visitor studies carried out by Marilyn G. Hood (1989: 168) 'repeatedly showed that the entirety of a museum visit is important to families'. On the basis of her findings she concludes that 'families try out leisure places where they will feel welcome, comfortable, and rewarded, and they return to those where their expectations are met and they are satisfied with the total experience'.