

Museums and Education: Theoretical Approaches and Implications for Asian Universities

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ABSTRACT

Over the last few decades, museums have become centres of learning and not merely places for the exhibition of artefacts. Learning is a process based on knowledge and is not necessarily confined to classrooms. Children learn best through visual interaction and learning through the visual medium is considered to be more effective than learning through texts. In museums, visitors interact with visual objects leading to a more meaningful learning process. Children are especially fascinated with the objects displayed, which can become an effective medium of instruction. This article discusses educational and psychological theories and empirical studies that could be employed by museum educators to facilitate effective museum learning. In addition to teaching approaches, this article also discusses the possibility for university teaching and learning experience to be gained at museums and art galleries as part of training requirements for students undertaking Art and Design courses as well as Visual Art Education courses in Asian universities.

Introduction

The current development of museums can be seen as a public response towards museum functions. Earlier, museums were seen as research hubs and a repository for the collection of artefacts. Education was not an aim of any museum establishment. From small private collections to large premises, the terms education and learning were rarely used and left unspecified.

Over the last few decades, the roles of museums have evolved. Museums have expanded in a variety of ways and gained increasing popularity (Greenhill, 1999), not only as places for conservation and restoration of artefacts and objects but, more importantly, to fulfil an educational role as reputable public learning institutions.

Historically, museums owe their existence to private and public funding. These ‘public assets’ receive major funding for their establishments and maintenance. With a large expenditure every year, people have started to consider the various roles that museums could play other than just preserving old objects. Mandates have been given to local authorities to establish places for the construction of museums that could become centres of research to study the past (Nicholas, 1999). Since then, an increase in numbers has led to the change in their primary function from research centres to educational institutions.

In the past, research and collection were the primary subjects for museum organisations. Interestingly people or visitors have now become part of the research. For instance, museum organisations are trying to develop research into the needs of visitors with regard to the museum interior and composition of the objects (Hein, 2002). The function of a museum has changed from being a repository of static presentation of artefact collections into an active learning environment for visitors.

Therefore, museums no longer function only as research centres. Visitors now contribute to research through “acquisitions” and questioning about the objects being displayed. In order to address these questions, visitors have the opportunity to engage directly with the education curators or museum educators. This has prompted researchers in museum organisations to find the answers in order to channel the correct information to visitors.

Museums: Their Purposes and Functions

What are Museums?

A museum is, in essence, a collection of collections (Nicholas, 1999). Children and adults usually have their own collection of objects, which can be assumed to be their first personal collection. These personal collections are normally collected in the early years of life. Hooper-Greenhill (1999) describes how these personal collections gradually become museum collections, when a collector donates the objects for

public display for educational purposes. Most museums were not originally planned for public use: more often they were private collections, which were in time opened to the public (Nicholas, 1999).

A typical definition of museum adopted by the International Council of Museums (ICOM) 1974, is cited in Hein's (2000) book entitled *The Museum in Transition: Philosophical Perspective* is,

A non-profit making, permanent institution in the service of society and of its development, and open to public, which acquires, conserves, researches, communicates, and exhibits, for purpose of study, education and enjoyment, material evidence of man and his environment

This definition portrays a range of differences between the museum functions and the collections of private collectors. Millions of people visit museums every year and this trend will continue. Individuals, families and perhaps groups, regard visiting museums as an enjoyable way to spend time. Museums are special places where people collect and display fragments of their past, their world, their dreams, and their perceptions of life (School Council, 1972).

The word "museum" is derived from an ancient word "muse," a Greek mythological association with the nine muses who presided over song, poetry, and the arts and sciences, and thus education. In the ancient world, a museum was both a "place of the muses" and a place of scholarship and learning, as in the Museum of Alexandria founded during the third century B.C. (Durbin, 1989).

There are many kinds of museums, but the most well known are art, history, natural history, and science and technology. Museums may be based on collections of a single field such as medicine, music, transportation, outer space, clocks, sports, or the circus, on a single person such as a president, a place or a period of history or on a special audience like children. Zoos, aquariums, arboreta, botanic gardens and planetariums are also special kinds of museums.

Within each of these places, objects of lasting interest and value, organized into collections representing all time periods and increasingly understood and exhibited within an interdisciplinary human context, await discovery. These objects are the real things of our social world and their value and accessibility turn them into vital teaching tools for connecting students to the world of social studies (Durbin, 1989).

The Functions of Museums

The question of what museums are for can simply be answered by understanding the function of museums themselves. Traditionally the museum's primary function was to exhibit objects and artefacts of the past. However, changing their role allows for the philosophy of the museum to be viewed from educational perspectives. Museums provide unique settings for the teaching of many subjects. However, this requires the museum educator to establish a philosophical framework that outlines specific criteria to be followed during the development, implementation, and evaluation of museum education programs (Berry & Mayer, 1989). Learning can only occur when visitors are able to connect to what they already know and make associations between what they bring to the exhibition and what is presented.

Objects in museums often display the cultural background of people (Hooper-Greenhill, 1999). The use of objects enables students to build a visual memory about a particular society that produced the objects as well as its historical relevance. In addition, objects help students understand chronological event easily, through the use of objects. Hein (2002) stresses that "people learn to learn as they learn", and learning consists both the skills of "constructing meaning" and "constructing systems of meaning". For example, the learning of the chronology of a single event may facilitate the learning of the word 'chronology' itself. Each meaning constructed enables the learners to give meaning to other sensations, which can fit into a similar pattern.

Interestingly, according to Durbin (1989), the use of objects will be more exciting if the students employ their own judgement about the chronological event and hypothesise about the objects. Discussions about the objects give a meaningful experience when students participate in distinguishing the objects according to their perspectives.

Museums and Multiculturalism

Besides functioning as hubs for exhibiting and displaying objects, museums also portray the wealth and richness of cultures. Visitors, especially children, can gain information about other cultures of different places and backgrounds in the museums, hence promoting cross-cultural transfer of knowledge.

Artefacts and objects from other parts of the world can be gathered and exhibited to expose children to the samples of objects. This could help children to understand different cultures, instilling a sense of respect towards people of different ethnicity and origins. As public museums emerged during the nineteenth century, one of their priorities was the education of the public. Museums as pedagogic organisations can be used to expose large groups of people to culture, to those finest works of art that society has produced (Hooper-Greenhill, 1999).

Objects are collected and exhibited in museums for various reasons. Objects or artefacts may be displayed because of their distinctive qualities or because of their strong association with the past. Hooper-Greenhill (1999) strongly believes that museums can inspire learning and could be the place where parents or visitors can discuss their own cultural values. Hooper-Greenhill adds that museums possess the ability to promote cross-cultural learning. However, to allow for this type of learning, museums have to adopt a neutral and more open approach. Research conducted by Hooper-Greenhill (1999) reveals that there is a common perception that the contributions of black people in British society have been ignored because of colonial views that still prevail within British museums.

The existence and understanding of multiculturalism in museums, according to Vallance (1999), are derived from two possible factors. First, museums are visual places dominated by exhibition of objects, and there are immediately visible messages implicit in what are on view in the galleries. Museum can be more or less multicultural by the variety of objects readily apparent to the visitors and by the sorts of objects that are most accessible (Hooper-Greenhill, 1999). Second, museums can promote multiculturalism only when the collections are viewed by educators, visitors and public-relation departments.

Museum-learning Theories and Approaches

Teaching and learning in a museum setting requires knowledge of the museum field, as well as knowledge about the field of education (Berry & Mayer, 1989). Museum educators must have at least a basic understanding of education so that they will know about the environment that is most suitable for learners. Education tends to be understood as focusing on outcomes and is very much based on exam results rather than on process. This notion has a narrow educational purpose, as the learning process is an exploration of knowledge.

Bruner (1999) describes learning as a process, which involves an enormous amount of information, skill and experience. Learning is the satisfaction of a higher-level human need and cannot take place until lower-need levels have been satisfied.

The learning process that occurs in museums is varied. Educationists and psychologists have listed a variety of approaches that may be used to deliver and support lessons in museums. Like other methods of teaching, those involved in the teaching and learning process must at least have basic teaching skills supported by educational psychological theories, before they can deliver an effective lesson to young children.

Learning in the classroom is very different from in the museum. Museum learning requires a consideration of the unique qualities of the museum environment (Berry & Mayer, 1989). One of the obvious differences is the freedom that children experience in walking around and looking at the display.

Therefore, the setting and arrangement of the museum have to be appropriate to the needs of visitors. The architecture of the museum, the arrangement of the galleries, the signs welcoming visitors (or the lack of orienting devices) and the composition of staff all contribute to communicating museums' educational policy (Hein, 2002).

Humans are enormously complex with their own characters, which vary from one to another including learning. For centuries, educationists and theorists have researched human behaviour, struggling to find the best approach to deliver lessons that foster effective learning. In relation to this various teaching and learning theories have developed. However, these educational theories are not confined to the classroom environment only. They also can be applied to the learning environment of museums. A museum experience is almost always rich and often involves novelty for visitors and is bound to contain educational potential regardless of the intention of museum staff or visitors (Hein, 2002).

The process of learning through objects can be exciting and fun because it is participatory, potentially taking the learners in many directions. Objects in museum collections embody the ideas and value of past social formations (Hooper-Greenhill, 1999). Therefore, they may stimulate questions about narrative background of the objects and lead to more questions about the objects.

People love to handle objects (Hooper-Greenhill, 1999) and dealing directly with objects facilitates more enjoyable learning. We like to experience things for ourselves and we like to look at them, handle or

explore them with our senses, and come up with our own ideas about them. As stated by Crouch (1990), "Objects are a key to understanding cultural life." They play an important role for every society and it is the society's responsibility for the kind of designs produced for objects, their usage and their metaphorical associations.

Theorists believe that learning in museums could facilitate more meaningful learning as the artefacts may have a connection with the background of the visitors. Furthermore, an audience normally finds the visual narrative presented during a tour accessible and enjoyable, and is also equally concerned about the content of the discourse. Objects are perceived as sources of knowledge, as parts of the real world that symbolize significant meaning to the visitors (Hooper-Greenhill, 1999).

Hooper-Greenhill's Modes of Interacting with Objects

Hooper-Greenhill (1999) suggests three ways or modes of making contact with material objects to enhance learning. The first approach is the Symbolic Mode, which is the most abstract, usually operating in a verbal form. Its sophisticated skills require an understanding of verbal communication and the ability to manipulate language to deliver information.

The second approach is the Iconic Mode, which consists of learning through images and imagination. Paintings, photos and films are representations of reality that describe materials and objects. This approach is a more concrete way of learning because the object of imagination is made based on the objects on display in museums. The final approach is the Enactive Mode, which consists of learning through real things such as people, objects, activities or events, allowing direct information

In museum learning, the Enactive Mode enhances the interaction between visitors and the objects, hence learning is taking place. It is more practical as students use their senses in interacting with the objects, thus creating responsive interaction.

In addition to Hooper-Greenhill's approaches of learning through objects, educational approaches may also be employed to assist teachers and educators in facilitating more meaningful and valuable museum-learning experience. 'Behavioural Approach' by Skinner, 'Progressive Learning' experience by Piaget and Vygotsky's theory of 'Social Interaction' are scrutinized and evaluated in terms of their relevance to education in museums.

Skinner's Law of 'Positive Reinforcement'

One of the learning theories that attempts to explain human behaviour was introduced by B. F. Skinner. The behaviourist approach is based on the premise that human beings can best learn through reinforcement. Behaviourists are manipulative and seek not merely to understand human behaviour, but to predict and control it. It is from this theory that Skinner developed the idea of shaping the behaviour of another person through controlling rewards and punishments.

Giving rewards encourages and motivates students and learners. Much of Skinner's theory revolves around the view that people learn best by being rewarded for responses that show evidence of having the potential to lead to the 'right responses' (sometimes known as operant conditioning) (Moore, 2000).

Skinner elaborates on his law of positive reinforcement with the notion that school children can replicate adult behaviour if they come to associate such replication with the occasional receipt of tangible rewards. The reward could be in various forms. The merit system which has been implemented in most schools can illustrate how being 'rewarded' can encourage student behaviours towards learning.

Piaget's Theory of Developmental Stages

Jean Piaget has developed a theory that explains learning according to developmental stages. According to Piaget, learning involves the active internalization of a complete schema (a collection of intellectual skills) as learners move from one stage to another. Furthermore, the process of learning and understanding process is not simply imposed by environmental forces (Hein, 2000). For example, Piaget states that learning is not shaping. Children assume an active role in learning that sees assimilation of environmental events into their own structure. Piaget adds that children construct knowledge through the principle of "to understand is to invent" (Jensen, 1994).

Piaget defines three stages of cognitive development that children are expected to progress through, which give them the ability to solve problems and understand their world. These are the sensory motor period (from birth to about 18 months), the concrete operational period (from age of about 18 months to 11 years) and the formal operational period (from about the age of 11 onwards).

Moore (2000) points out that Piaget believes children can develop in a progressive way. This notion generally states that they move naturally through a series of developmental learning stages, gradually enabling them to progressively handle more complex tasks and skills (Moore, 2000). He also believes that knowledge can be constructed through the assimilation of new and existing knowledge, which can also be defined as experience of new knowledge.

Piaget describes two forms of learning – *assimilation* (incorporating events and objects into existing ways of thinking) and *accommodation* (existing mental structures reorganized to incorporate new aspects of the environment). Learning may strengthen and enrich existing mental structures (staying at the same developmental stage) or it may evoke a mental reorganization, moving to or toward a new stage of understanding and knowledge (Moore, 2000).

The English National Curriculum for Art and Design (1999) also mirrors Piaget's theory of developmental stages through its emphasis on definable levels of achievement at certain ages and through its identification of 'key stages' that parallel current arrangements for institutional transfer at ages seven and eleven (Moore, 2000).

Vygotsky's Social Interaction Theory

The Russian psychologist, Lev Vygotsky, has outlined a theory of learning and development that has some similarities to Piaget's theory of developmental stages (Moore, 2000). Although these two theories share similar characteristics, they are different in a few key aspects. The common aspect of Piaget's and Vygotsky's theories is that children could best learn through social interaction which allows learners to go beyond their individual experience, and extends their knowledge and ability to learn.

Learning is a social activity (Bigge & Shermis, 1992) that is intimately associated with our connection with other human beings, our teachers, peers, family members as well as casual acquaintances, including the people before us or next to us at the exhibit. We are more likely to be successful in our efforts to educate if we recognize this principle rather than try to avoid it.

Briefly, Vygotsky believes that children learn best by interaction with their own group and peers. Teachers in a classroom can organise this

social interaction in the form of group work that can be easily coordinated in many places including museums. Vygotsky's theory of teaching and learning as an essential social activity has profound implications for classroom practice (Moore, 2000).

Rogoff and Matusov (1999) in their discussion about Vygotsky's theory of social interaction suggests that

In varying communities of practise, learners participate in different activities, more or less deliberately designed for their learning. The learners development includes not only what they are learning how to do, but also they are participating in the community using (and demonstrating) their developing skills and knowledge.

Vygotsky's concepts of collaboration can be implemented as a basis for museum activities arranged by a museum education department. The implementation of Vygotsky's theory of cooperative learning in a museum setting was one of the activities arranged by the Education Department of the Birmingham Museum and Art Gallery, West Midlands United Kingdom.

According to Vygotsky, children's understanding is shaped not only through adaptive encounters with the physical world but through interactions among people in relation to the world – a world that is not merely physical and apprehended by the senses, but also possesses cultural and meaningful significance, and is made so primarily by language (Edwards & Mercer, 1987). Human knowledge and thought revolve around themselves and their own surroundings before becoming fundamentally cultural deriving their distinctive properties that form the nature of social activity, language, discourse and other cultural forms.

Trisha Pete (2003), Museum Educator of the Birmingham Museum and Art Gallery, argues that cooperative learning in museums is especially important for children's learning processes. It inspires children to work and mingle with other groups as well as encourages students to learn from each other. The interaction between individual visitors and the rich resource of the exhibition leads to unique outcomes for each visitor. By sharing these experiences with other members of their groups, visitors can enrich the experience of each group member.

The Learning Environment: The Case of Birmingham Museum & Art Gallery

Museum learning offers a totally different environment from a classroom (Falk, 1998). In contrast to a typical classroom that offers limited space a limited number of students, museums are spaces where objects and artefacts are collected and exhibited. It is far larger and has an open concept, making it undesirable for traditional 'school' education. Rather, learning in a museum can be more self-directed requiring audiences to develop individual understanding. Traditional classroom learning which requires learners' understanding of specific facts and tasks is almost impossible with museum-learning, as visitors do not spend sufficient time and are not there primarily for that purpose (Greenhill, 1999).

Self-directed learning in the museums requires audiences to take charge of their own learning. The descriptions or explanations given by the curator or an art teacher is to be absorbed and understood on an individual basis. Museum-learning experience can occur in several ways. The details of an object can be gathered through reading pamphlets and brochures and/or through a facilitator/educator who is assigned to explain. Learning styles in museums also vary, depending on the types of objects exhibited and the ways these objects are arranged (Greenhill, 1999). Objects become major resources replacing teachers in the classrooms.

Several observations were conducted in the Birmingham (United Kingdom) Museum and Art Gallery while a group tour was in progress, to identify methods and approaches used in museums. The observation was to fulfil two main objectives, to identify the approach employed by the educator or curator during group tour and to investigate the extent to which the approach facilitates and enhances learning.

The tour involved a group of primary school children from a school in Birmingham and took place in July 2003. The group consisted of twenty 13-year old students, accompanied by two teachers. This learning experience was videotaped and the students' behaviour was observed, allowing the researcher to study the learning process in depth. Simultaneously, the learning behaviour of several adult visitors was also observed.

The session began with students sitting on the floor, facing a piece of Renaissance painting. As the session progressed, most of the children listened attentively to the explanation given by the museum educator.

A question and answer approach was adopted, fostering two-way communication between the students and the museum educator. Students were compelled to ask question after question about the painting on display. Motivation was the key factor of learning. One of the museum educators in the museum noted that the objects exhibited were relevant to the background and cultures of the students, increasing their sense of curiosity in gathering more information about the objects.

The question and answer approach allowed individual students to gradually build up their confidence in asking questions. Despite the various types of questions, from simple to the most complex, the museum educator attended to each of the questions appropriately. The positive reactions reflected by the museum educator transmitted favourable response to the students, in which the pattern of questioning moved from comprehension type questions to probing for details. The session lasted for 45 minutes, in which the students were given descriptions of a Renaissance painting.

The question and answer approach prompted the students to narrate back the story of the objects. The session had equipped them with information on Baroque art and painting based on the explanation of a Renaissance painting. Once the students were fed with basic information related to the painting, they were able to respond to and understand more about other paintings in the museum. The approach employed by the Education Officer throughout the observation showcased the officer's ability to facilitate the learning process in a clear and organized manner.

Museums and Education: Implications for Asian Universities

What Our Museums are Still Lacking

A group of researchers from Universiti Utara Malaysia (UUM) was given a task by the Ministry of Culture, Arts and Heritage (then known as the Ministry of Culture, Arts and Tourism of Malaysia) in the year 2000 to investigate the educational role played by the museums, galleries and archives in the country. In relation to educational roles, the study

reports that Malaysia's museums, galleries and archives generally still have a long way to go, and attributed the weaknesses in playing the part to several factors, namely, lack of a clear educational policy, absence of a unit in planning and facilitating effective educational programs, lack of trained personnel and insufficient funds to implement and coordinate educational activities (Samihah et. al, 2000)

Though museums, galleries and archives have attempted to improve the educational-societal role from time to time, the root of the problem is very much related to the lack of expertise of those who coordinate educational programs and are qualified in museum education. Among the suggestions of this study is the establishment of an educational unit in each museum, headed by an officer who possesses an academic qualification in education (Samihah et al., 2000).

Teachers' Training and the Quest for Expertise

In addressing the need to produce qualified personnel in museum education, the Art and Design Education Program at Universiti Teknologi MARA (UiTM) has ventured into exposing to its students the teaching methods that can be employed in museum settings. Hence, the subject of Art Education in Museums and Galleries was introduced as part of syllabus undertaken by students of Bachelor Degree of Education (Art and Design) with Honors. This course is designed to nurture the awareness in students of the ideology and philosophies of the art gallery or museum. It also provides the understanding of the broad educational functions of the gallery/museum, including the vernacular appreciation of art and the development of a lifelong approach to learning. To date, UiTM is the only higher learning institution in Malaysia to offer Art Education in Museum and Galleries in teachers' training program (*Berita Harian*, 2005).

Art Education in Museums and Galleries as a Core Subject

The three-credit hour course is compulsory for students in the second semester, in which they are exposed to various methods to facilitate educational activities in museums. The students learn about the educational theories and philosophies in museum, museum history, methods of coordinating museum tours, micro-teaching in museums as well as the use of object-based learning in museum settings (Badrul, 2005). In addition,

the assessment requires the students to organize teaching in the museum in which they can apply the knowledge that they have learned in a real setting. Teaching outside the classroom provides a new niche for the teaching of visual art education, simultaneously providing the opportunities for museums to enhance their educational programs. The course offered at teachers' training level is a positive effort by UiTM to overcome the lack of expertise in museum education as well as positioning the program as dynamic and current and diversifying the potential of graduates in the workforce.

ASEAN Museums: Optimizing their Role in Education

In December 2005, a workshop on museum education was organized by the Ministry of Culture, Arts and Heritage, the British Council Malaysia, the National Museum, the National Art Gallery and Petronas Gallery. The main objective of the workshop was to introduce, expose and train museum personnel in relation to museum education, and to identify the educational role that museums have played. Organized in Kuala Lumpur, the workshop saw participations from various countries including Indonesia, Singapore, Thailand and Philippines. The participants generally felt that museums in ASEAN countries are not optimizing their role in education and that the awareness of museum personnel still needs to be improved. Though every country is faced with different problems, efforts have been taken to promote educational experience in museums. Malaysia and Singapore are among the exemplary ASEAN countries that have initiated more progressive museum education. Nevertheless, the workshop is only an initial step towards more serious efforts to position museums as learning centres.

Exposure to the potential of museums for teaching and learning of UiTM's trainee teachers is a continuous effort as it enables the trainee teachers to possess and diversity their teaching methods. It is hoped that the implementation of the course in the Faculty of Education, UiTM, will lead a way for other universities to follow suit. As a nation with citizens of various backgrounds, cultures and religions, museums are perfect platforms to stimulate the empathy and understanding of other cultures among the younger generations. Educational experience in museums is capable in instilling and enhancing students' level of tolerance through explanation of artifacts and artwork.

Conclusion

Over the last few decades, the primary function of a museum has changed dramatically from just a place to collect and exhibit objects and artefacts to a place that offers learning experience and promotes multiculturalism. Museum learning facilitates more meaningful and enjoyable learning as it allows visitors to interact directly with objects on display. Its self-directedness enables visitors to take charge of their own learning, and the availability of museum educators and curators to give explanations enhances the learning experience. Museums are also ideal places to understand one's own culture as well as the cultures of others.

To enhance the museum-learning experience, a particular theory or approach may be employed by museum educators to assist individual or group visitors with information. Museum education can provide pleasurable visual experiences that serve as the positive reinforcement required by behaviourist learning theory and can be structured to accord with Piaget's theory of developmental stages. Equally, museum learning may allow for Vygotskian social learning through interaction with peers. These theories and approaches can serve as guidelines for the museum educators in targeting the information to be disclosed, objects to be selected and learning environment to be facilitated, appropriately to the age and maturity level of the visitors.

The brief observation carried out in Birmingham Museum and Art Gallery on primary school children revealed that museums can effectively function as educational institution to provide knowledge and information to public visitors, especially children. The question and answer approach utilized during the session helped museum educators to handle the session in an interesting and practical manner.

The museum learning experience is unique and can have a profound impact on student learning, as students interact with objects and deepen their understanding of the past and how human lives change progressively. It is also worth noting that students of different cultures may receive information on objects differently, thus facilitating different levels of knowledge acquisition. If cross-cultural learning is to take place, museum educators need to be sensitive to the needs of visitors from different backgrounds, as more information may need to be given so that these visitors will have a sufficient basis for background knowledge of particular objects. The incorporation of museum-based learning into the curriculum

is therefore an important challenge for schools, ministries and universities throughout Asia.

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