

THE RELATIONSHIP OF EXHIBITION SPACE DESIGN AND THE SUCCESS OF DELIVERING MESSAGES TO MUSEUM VISITORS IN JAKARTA

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ABSTRACT

The research explored exhibition space designs, particularly the interior design elements such as circulation, lighting, and display techniques to find out whether the design elements corresponded the design principles and to find out which museum had the most ideal exhibition design that was able to deliver exhibition messages to the audience. The research applied qualitative method with case study approach in three museums in Jakarta, those were National Museums, Bank of Indonesia museum, and museum of Fine Art and Ceramic as case studies and qualitative data collecting methods through observations to get real-settings information. Data analysis and comparison of various interior elements shows that from the three case studies only Bank of Indonesia Museum has an integrated exhibition space using various interior elements; circulation and lighting design as well as display technique that support the success of a museum to deliver exhibition messages to their visitor. It can stimulate visitors senses visually, auditory, and kinetic.

Keywords: exhibition space, message delivery, museum visitors

INTRODUCTION

Museum can be defined not only as a place to store various types of priceless tangible as well as intangible human treasures, such as history, culture, memory, and even dreams and hopes, but also a place for research, learning, conservation of those treasures which need to be opened for public. With well designed and interactive exhibition spaces, museum visits are very popular not only for schoolchildren but also for families. They consider the visit as educative and entertaining at the same time. Miles (in McLean, 1993) has pointed out that the purpose of museum visits for contemporary visitors are to gain information, broaden their knowledge, social interaction, as well as for entertainment and relaxation. However it is popular in other countries, museum visits in Indonesia have a different phenomenon; it is considered boring and unattractive.

Unlike exhibition space in overseas museums, with attractive exhibition concepts, Indonesian museums are famous for its old, haunted, dark, and dusty. What visitors see in a museum is rows of various objects of antiquities that are stored in dusty glass cases with low-intensity lighting (probably for conservation reasons) and inadequate interpretation of those objects. The visitors as the passive audience of those objects can only see and observe objects without any clue and in-depth meaning of what they see, hence experienced the objects, while recent museum visitor study sees the particular shift towards visitors as active and looking for affective visitor experience (Macdonald, 2007). This is the problem of Indonesian museums, although they have numerous valuable collections, they fail to communicate to its audience. When objects fail to communicate, and messages fail to be delivered, it will result in the failure of museum's education role. The visitors will visit the museum, see the objects, and leave the museum without any clue about they just have seen. One method to achieve

museum's educational mission is through exhibitions, as Hooper-Greenhill (2000) has pointed out that for most visitors it is the exhibitions and displays that make up the educational experience of the museum. However, the understanding of the powerful pedagogic role of displays and exhibitions are still limited and seldom researched. As an important approach to communication in museums, exhibition spaces in Indonesian museums are not only seldom researched, but also not yet planned and designed according to its needs. Without interesting and attractive exhibition concepts, museums become an undesirable place to visit. The research will look further exhibition space designs, particularly the interior design elements such as circulation, lighting, and displays in various museums in Jakarta as study cases. It is done to find out whether the design elements corresponds design principles and to find out which museum from the case studies has the most ideal exhibition design that able to deliver exhibition messages to the audience through its design elements.

Education is the prime role of the museum. Pedagogy of museum can be evaluated in relation to both contents, which refers to the subject-matter of teaching and style. Style in this refers to the style of communication in displays, including how the objects that are used or placed, how the information is written, the specification within the exhibition for various forms of sensory engagement (including visual, tactile, auditory senses), the use of space, light, color and so on (Hooper-Greenhill, 2000). Cildir and Karadeniz (2014) have pointed out that the style of communication can be expanded through the senses of touching, hearing, and even smelling which will result in sensorial and effective education. While Wulandari (2014) has categorized the exhibition design elements into four groups, which includes space transformation, circulation and pacing, lighting, and display techniques. Museum exhibition can be considered successful when it can make the subject come to life. It makes the point quickly, memorable, clear where one should begin and how one should continue, uses modern display techniques that help one learn, and includes a comprehensive display of objects and/or specimens (Miles as cited in McLean, 1993). Most of the key successes of an exhibition can be accomplished through well-designed exhibition space, which includes display and presentation techniques, direction and circulation, lighting, ergonomics as well as other visual elements, such as textures, colors, form and so on. To fulfill museum's educational purpose, the museums need to prepare exhibition content as well as the style of communication that corresponds contemporary visitors need.

Exhibitions are the experiences, thus in museums, visitors should learn not in a didactic way but also through experience. Museums should plan and design exhibition space according to design principles, focusing not only the collections but also to the audience. What people do and how they feel in an exhibition is as important as what they learn. The exhibition messages should be delivered not only through the collections and information labels, but also through experience that stimulates various senses (visual, tactile, and auditory). To create an exhibition space with interesting and attractive space experiences, a well planned interior space is greatly needed by processing various space elements, such as space transformation which deal with forms, balance, scale, proportion, rhythm. This space will be ideal for visitors that circulation type that corresponds the needs and messages of the exhibition, lighting design that can stimulate visitors' visual senses, and display techniques. These elements will be further discussed and observed from various study case of exhibition space of museums in Jakarta.

METHODS

Heerwagen (2001) has pointed out that research in interior design can take two routes; design evaluation and theory development. Design evaluation where research is oriented toward real-settings, especially assessing what works and what does not in a particular design. And theory development that focuses on understanding basic relationships and concepts. The research of exhibition spaces in the

museum which aims to evaluate its designs from various museums in Jakarta will take the first route with qualitative methods and study case approach. By using this approach, an in-depth study about a case or phenomena will be done by collecting detailed information through various data collecting methods within a determined time frame (Stake in Creswell, 2009).

Based on the determined approach, data collecting is done qualitatively in two stages. The first stage is collecting secondary data or desk research. In this stage, all relevant data from various sources, such as books, journal articles, and websites regarding exhibition space designs and museums are studied and analyzed. The purpose of this stage includes giving general information about the topic, analyze previous studies that have been done, as well as to determine exhibition design standards. The next stage is the primary data collection through observations to the museums that determine as the case study. They are the National Museum, Bank of Indonesia Museum, and Museum of Fine Art and Ceramic. These museums are selected, not only because of their popularity in Jakarta but also because they are also managed by three different government institutions and have undergone major renovations last years. By directly observing the exhibition spaces, researchers will get real-settings information as well as other unusual factors. During observations, photographs and data regarding the layouts, circulations, lighting, display, and presentation techniques are taken. However, because of the broad area of exhibition space in the museums, the research object is limited to only one floor or several exhibition rooms. In the National Museum, observation is done on the second floor of B Building; in the Museum of Fine Art and Ceramic, observations are done in several visual art exhibition rooms; and in Bank of Indonesia Museum, observations are done in the Bank of Indonesia History room. This is done due to the limited research and data collection period.

The data collected from previous stages are arranged, categorized, and analyzed in three groups; circulation, lighting, and display techniques. The primary data are analyzed and evaluated based on the exhibition design standards that are obtained from desk research to find out whether the exhibition space designs corresponds the design standards well. The analysis of the three case studies is then evaluated and compared to conclude which exhibition space with ideal interior planning to deliver exhibition messages to the visitors.

RESULTS AND DISCUSSIONS

The observation results related to the exhibition space elements that will be discussed under three categories; circulation, lighting, and display techniques. The three case studies have dissimilar circulation type that can be seen in Figure 1. The second-floor exhibition room of the National Museum adopts the radial plan circulation type. This circulation has one way circling the area that is started from the entrance, directed through the exhibition space, and exited the exhibition space from the same area of the entrance. In this circulation, visitors are expected to observe all collections one by one. The whole routes of circulation give enough space for visitors to move around conveniently, observe the collection from one object to another without any worries of coming into contact with other visitors or traffic blocked at any point of the exhibition area. However, the circulation design in this room seems deficient. Collections are arranged neatly in order with no emphasis between the circulation and display area that results in a plain room ambiance. Interior elements such as floors and ceiling are not yet designed to strengthen the circulation concepts as well as to guide or direct visitors. This will create confusion and result in visitors' move to various directions.

Unlike the National Museum, Museum of Fine Art and Ceramic and Bank of Indonesia Museum adopt the linear or direct plan circulation type; a straight and directed plan from one room to another and from one object from another. This type of circulation is suitable to convey messages related to historical objects that are divided by periods. In Museum of Fine Art and Ceramic, the main

circulation path is strongly stated through different materials applied on the floor. The circulation area is 1,2 meter wide wooden flooring with room title and number attached to inform and clearly guide the visitors. The similar design is repeated from the beginning until the end of the exhibition. The advantage of this circulation concept, besides helping visitor movement is that the historical message can be easily received by the visitors. However, the long routes of circulation and countless design repetition without any point of interest will cause visitor's fatigue and boredom since they have no clear aim in exploring the long exhibition. Besides direct plan for the main circulation, Bank of Indonesia Museum also adopts random plan circulation for the sub-theme rooms. This gives variations in visitors' movement. Not only there are areas for direct and fast movement, but areas with the slower movement where visitors can take the longer time to observe collection randomly are also available. The width of the main circulations are also varied; some are narrower than the others, such as at the end of several period rooms. The constrictions at the end of these rooms are not only aiming to create the certain impression but also to give signs to visitors that they will enter a room with new sub-theme. However, sometimes the constriction at the end of several rooms is too extreme that results in the blockage of the main circulation route. The main circulation width needs to be ideal for visitors' movement, especially during peak season with a high number of visitors that are coming at the same time. With these circulation designs, visitors will know where they are going and where they should continue which will reduce visitors' confusion and boredom.

Choosing the suitable circulation plan and applying it to various interior elements will affect how the collections communicate with its audience. The circulation designs that monotonous, unattractive, and confusing can be a factor that will cause a failure for a museum to deliver exhibition messages to their visitors. From the case studies, only Bank of Indonesia Museum uses varied circulation patterns and interior elements. It is not only appropriate to deliver the exhibition messages, but also make visitor's movement more interesting. The circulation type of that three museums can be seen in Figure 1.

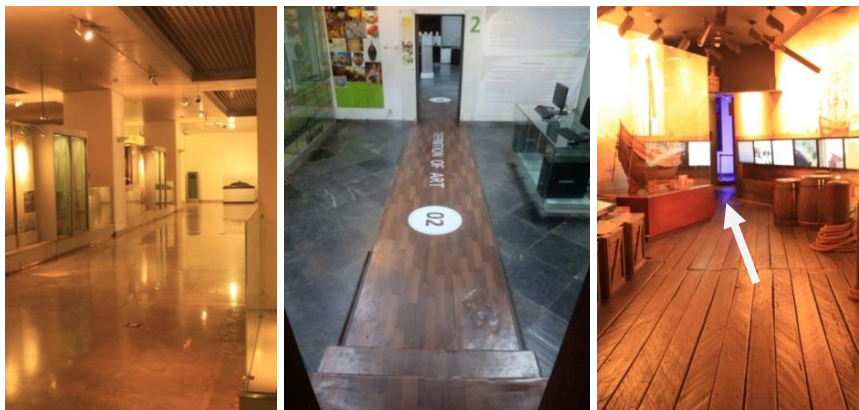


Figure 1 Circulation type of National Museum (left), Museum of Fine Art and Ceramic (center), Bank of Indonesia Museum (right)
(Source: Wulandari *et al.*, 2016)

There are two types of lighting that are commonly used in exhibition spaces; natural lighting and artificial lighting, which consist of exhibition lighting, ambient lighting, and working lighting. The National Museum uses two types of lighting; natural and artificial lighting. The natural lighting strikes horizontally from several windows alongside the building (side lighting). This type of lighting resulting glare and reflections are undesirable for exhibition spaces and may make an exhibition inaccessible for visitors with visual impairment and aging eyes (McLean, 1993). To avoid this effect, the windows are treated with the thin layer of the curtain that can be seen in Figure 2. Meanwhile, the

artificial lightings are the combination of exhibition lighting; such as downlights and spotlights to highlight certain collections and ambient lighting which includes wall washers to create the certain atmosphere in the exhibition space. However, these lightings do not seem to serve its purpose. The differences between the highlighted and the common collections do not stand out. The intensity of lightings in overall exhibition space although sufficient, it seems flat. Thus, it does not give any dramatic effect that can influence visitor's emotions.



Figure 2 The Use of Curtain as Treatment to Lessen the Glare Effect,
The National Museum
(Source: Wulandari *et al.*, 2016)

In the Museum of Fine Arts and Ceramic case, most of the collections are oil based artworks that are vulnerable and easily damaged to direct sunlight. The heat and UV rays from natural lighting cannot be completely controlled. Thus side lighting is unfavorable, especially in the fine art exhibition. Thus, the selection of lighting types should be adjusted to this need. However, Museum of Fine Art and Ceramic has two types of lighting; natural and artificial lighting. Natural lighting strikes through door and window openings around the exhibition space (side lighting), as well as vent holes. Sidelighting not only can cause glare and shadows that distract visitors and changes the color perception of the artworks, in the longer term, but it can also gradually damaged the collection. To overcome this problem, almost all windows openings are blocked with the metal partition that also functions to hang and display artworks, however further problems arise. These partitions are not high enough to block all windows and vent openings, which some are located very high above. It can be seen in Figure 3.



Figure 3 Windows and Vent Opening with White Steel Partition
In Museum of Fine Art and Ceramic
(Source: Wulandari *et al.*, 2016)

Furthermore, most of these partitions are made of steel with white finishes and numerous small holes. These numerous holes most likely exist to create adjustable display systems. However, they also make the lights from window openings overflowing the exhibition room and damaging the artworks. The artificial lighting used in these rooms is exhibition lighting, ambient lighting, and working lighting. TL lights function as general lighting are mounted neatly in the existed ceiling, while ambient lighting uses small downlight mounted in down ceilings of various heights and spotlights as exhibitions lighting are adjustable according to the exhibitions need. However completed with various lighting types, it is not clear what atmosphere is trying to be created by the effects of these lightings are not clearly seen moreover felt by the visitors. Most of the artworks are displayed on a white metal panel and illuminated in the equal intensity of lighting all the way through the exhibition. This makes the exhibition seems flat and boring; there are no emphasis or variation in lighting that will stimulate visitor's curiosity to explore further. Moreover, the combination of artificial lighting and uncontrolled direct sunlight will produce lighting intensity with no certain standards. The lighting inside the room will change according to the wheater outside the rooms when it is cloudy; the rooms will be darker and the opposite.

Unlike previous museums, the exhibition space of Bank of Indonesia Museum is completely closed from natural lighting and only uses artificial lighting, consisting of ambience lighting and exhibition lighting; spotlights and track lightings which are easily adjusted based on exhibition needs. Even though the intensity of light seems low through spotlights that can light intended area effectively; visitors can see the exhibition clearly. Every room has various lighting design according to the story and messages. For example is the Nusantara period room; the lighting design is calming and comfortable resembling its period. In the Independence room as well as the 1997 monetary crisis room, the lighting is designed as if visitors are experiencing crisis through light colors transitions from red to orange, yellow, and other darker colors. The exhibition ends with 2005 period, where Indonesian rise from the deterioration. This room exhibit changes in calming color, such as green and blue that resemble a calm and optimism of this era. The lightings in this museum do not only work as an illumination tool for the collections but also use to shape room ambience. It makes the rooms are more interesting to explore. Whether it is a dramatic or peaceful ambience, the lightings take part in establishing those atmospheres. Through lighting, the visitor can have the better understanding of the events that happen on each era. Thus the story and messages can be easily received by the visitors. However, this well-planned lighting design also has the weakness; the lightings need to be maintained continuously at the high cost. If one or some of the lights do not function or even broken, it will affect the ambience of the whole room, and the messages will not be delivered as well.

Most of the collections in the museums are displayed by using various types of vitrines, in exception of Museum of Fine Art and Ceramic which mostly uses the partition to display their artworks. Vitrines should be designed according to the various needs of the collections, such as size, texture, as well as human ergonomoy. The overall vitrines in the National Museum are made from the identical material with gray laminate finishes and aluminum edging. However, it has various heights with the average are 50 cm in height. This makes some objects are displayed nicely according to human eye-level standard, and some objects are displayed under 40 cm, which caused visitors to bend down or even squatting to be able to see the objects. Besides vitrines, some objects are openly displayed using stage display where a short message is stating 'Please Don't Touch' is available near the object as well as an information label underneath the message. The position of the label itself is too low, and the font is too small with narrow spacing, which difficult to read in the ideal distance. Thus, visitors need to bend and move closer to objects to read the information. This cause contradiction when visitors are not allowed to touch objects, but on the other side visitors need to move closer to read the information. This condition can provoke visitors to touch objects that can be seen in Figure 4. This situation can be avoided by using vitrines or designing a stage with appropriate size as well as information label with bigger font and better position. Thus visitors do not need to bend, squat, or move closer to objects to read the information (Figure 5).



Figure 4 Distances between Objects and Visitor,
The National Museum
(Source: Wulandari *et al.*, 2016)



Figure 5 Ideal Distance between Object and Visitor,
The National Museum
(Source: Wulandari *et al.*, 2016)

In the Museum of Fine Art and Ceramic case, partitions and vitrines are used to display their fine art and ceramic collections. The 2 – 2,20 meters panels are white finishes steel with rows of small holes for the adjustable display system, however with so many holes available, the walls and window openings behind the partition can still be seen and can cause distraction. The modular panel can be used for artworks of various sizes. For smaller artworks, the size of the partition seems ideal; however, for bigger artworks, the panel seems too small. The remaining distance between the panel and artworks are too narrow, causing a visually unproportional effect and losing the majestic feel of the artworks. One solution to this problem is to use the very high existing ceiling to create better display system according to the need of the artworks. Various types of vitrines are found in this exhibition room, such as wall case and top table case. The full-length wall case which stored the ceramic collections consists of various sizes of small cases. Some of the collections are located suitable to human eye-level standard. However some other are located too high that can be seen in Figure 6, or too low to be seen from the proper position. One small case is striking out 40 cm from the other cases, which may aim as an emphasis. But seeing that, this case is also located in the circulation area that will not only cause difficulty in seeing objects but also become a threat to visitors. Their body or head can accidentally bump into the vitrines (Figure 7).



Figure 6 Ceramic Display above Human Eye-Level,
Museum of Fine Art and Ceramic
(Source: Wulandari *et al.*, 2016)



Figure 7 Ceramic Display with Striking Out Case,
Museum of Fine Art and Ceramic
(Source: Wulandari *et al.*, 2016)

Moreover, issues of scale arise from these vitrines. Even though comes in various sizes, most of the time, it is not suitable for various sizes of ceramic. As an example, one small size ceramic is being displayed in one big size vitrine, resulting the exhibit appear diminutive and unimportant that can be seen in Figure 8. Not to mention the vitrine is completed with an image of a big oil painting tube (Figure 8). The image is even bigger than the exhibit itself, which can distract visitors from the collection. The scale between the vitrine, the image, and the exhibit are uncontrolled, and these issues of scale can make people feel disoriented and uncomfortable (McLean, 1993).



Figure 8 Scale between Vitrine, Exhibit and Image,
Museum of Fine Art and Ceramic
(Source: Wulandari *et al.*, 2016)

If the National Museum and Museum of Fine Art and Ceramic use modular vitrines for any size and types of exhibits, Bank of Indonesia Museum uses various types of the display according to the objects need. One of them is floor embedded vitrines with fiber casing which is safe for visitors to step on. These unusual types of display completed with bright lighting draw visitors' attention to look down or even to step on the display. Another type of display is interactive displays of antique globes that can be touched and rotated. Seen from the position of these globes, this interactive display is suitable for children ergonomics. Most the vitrines in this museum are designed specifically for certain objects. Thus vitrines that are too big or objects that are too small and seem unimportant are nowhere to be found.

Information label is important to give depth understanding of an object. Thus it needs to be designed as ideal as possible according to the needs of the collection as well as the visitors who are going to read it. Various information label design can be found in the study cases that can be seen in Figure 9. In the National Museum, information labels are very conventional. The texts are printed and laminated on a standard piece of paper, using a very small font and narrow spacing, which makes it difficult to be read at a comfortable distance. Some exhibits are even left without explanation, not too clear whether the label is accidentally detached or not existed. Similar to the National Museum, Museum of Fine Art and Ceramic also has information label that is printed, laminated, and directly attached to the vitrines' glass and partition. Besides visually unpleasing to see, these labels also have high risks of damage and lost because it is easily touched and taken. Bank of Indonesia Museum has the most appropriate and ideal information label; it is printed on an acrylic panel; the font size is suitable for visitors to read the labels in comfortable position.



Figure 9 Information label in the National Museum (left), Museum of Fine Art and Ceramic (center),
Bank of Indonesia Museum (right)
(Source: Wulandari *et al.*, 2016)

CONCLUSIONS

As means for knowledge and education, museums need to give information through its collections and exhibitions in a fun way possible by using various interior elements. Exhibition planning and designs are not done only to make the exhibition looks interesting, but also need to support the success of museum in delivering information to its visitors. Studies are done in three museums in Jakarta, particularly to its interior design elements. It shows that two out of three museums fail to communicate to visitors.

Regarding circulation, most museums use direct plan types which are considered suitable to tell a story. The weaknesses of this circulation are the long routes that will cause fatigue and boredom. Thus emphasis, the point of interests and variations are needed along with those routes. From the three museums, only Bank of Indonesia Museum that completes their circulation with area emphasis, node or point of interest to keep visitors' excitement. In the other museums, collections are displayed neatly from one object to the other without any emphasis, resulting in a flat and boring exploration. Lighting has an important role in exhibition spaces, whether for conservation or visitors. All museums have the good intensity of lighting, especially for visitors to observe the collections and read information labels. None of the three exhibition spaces is too dark and giving haunted impressions like many other museums in Jakarta. The adequate intensity of lighting in the overall exhibition however comfortable also creates a flat and boring impression. Bank of Indonesia Museum is the only museum which uses variation in intensity and light colors to create certain ambiance parallel to the exhibition narratives. The use of display technique is an important way to live up the collections; however, those techniques need to be adjusted to the needs of collections as well as the needs of the visitors. Museum of Fine Art and Ceramic uses inappropriately designed vitrines. Thus almost all ceramic collections look visually unproportional between the vitrines and the exhibits. Some of the exhibits are also located above or under human eye-level which makes it difficult to see. This condition also occurs in the National Museum. Information label plays an important role in delivering exhibits story and messages. However, most information label designs are still unattractive and unable to read, some are too small, too low, and others. For the objects to communicate clearly, information labels need to be designed according to human ergonomcy standard.

The educational purpose of a museum can be achieved in two ways; content and collection preparation as well as the style to deliver the messages. Rather than the formal and didactic approach in exhibitions, contemporary society prefers to learn through process and experience, such as room experience, interactive display, etc. In this approach exhibition planning and design takes an important role which can support the success of message delivery in a museum. From the observation and data analysis of exhibition spaces of three popular museums in Jakarta, it can be concluded that Bank of Indonesia Museum is the most ideal interior planning. It can support the success of a museum to deliver their message to its visitor through circulation, lighting, and display technique that which can stimulate visitors' senses visually, auditory, and kinetic.

To boost Indonesian's society interest in visiting the museum, exhibition space planning needs to be developed by paying attention to various needs of the collection as well as the visitors. Better and ideal planning can improve room experience. Thus the exhibition message can be easily received by the visitors. Their visit will become an unforgettable one, and the main purpose of the museum will be achieved. Further study of an exhibition and interior planning guidance and standards that include all technical details and specifications of an exhibition space will be needed. Besides that, research analysis of an exhibition space from the visitors' point of view, whether the space planning has helped them in the learning process and how the level of comfort, the attractiveness of an exhibition space is needed too.

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