

THE ROLE OF TECHNOLOGY APPLICATION IN THE INTERIOR DESIGN AT MUSEUM ZOOLOGI BOGOR

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ABSTRACT

The diversity of Indonesian flora and fauna amounting to 2,125 species of fauna and 8,000 species of flora is still unknown to most people in Indonesia. In addition to formal education, knowledge about diversity needs to be supported by supporting facilities as a means of non-formal education. Bogor Zoological Museum is one of the facilities that is able to meet the needs of the community to know the wealth of fauna in Indonesia which has been established since 1894. The impression of the architecture of the building and interior that is old and old needs to be renovated so that it can attract visitors to come to the museum. LIPI as the manager of the museum realizes that technology plays a big role in the daily lives of the target visitors of generation Z which is able to attract and facilitate the information process of interesting and attractive exhibition materials so that the goal of disseminating knowledge of fauna in Indonesia can be achieved. The design of the Zoological Museum renovation will use quantitative and qualitative analysis methods from the data collected, and continued the method of exploring ideas based on the use of technology to answer existing problems from the Zoological Museum. Modern concepts will be applied with the application of technology as a medium for interaction of exhibitors in several areas. The results of design that apply technology to exhibition materials such as information media, dioramas, visual graphics and the use of lighting can increase visitor interest and as well as interior design innovations that are different from existing conditions. It can be concluded that technology plays an important role in producing interior design with the delivery of interesting exhibition materials and is able to provide a different experience from museum visitors, especially for generation Z.

Keywords: Interior design, zoology, museum, renovation, technology.

1. PREFACE

The diversity of flora and fauna in Indonesia is huge. Indonesia is one of the three countries that has the most biodiversity, after Brazil, South America and Zire, Africa. Indonesia has about 8.000 species of plants and 2.215 species of animals that have been identified. The number of Indonesian biodiversity depends on climatic conditions and physical conditions of the region. The development of the number of biological organisms in Indonesia has increased due to the large temperature and rainfall which has made it possible for the growth of various types of plants so that many animals can also live in this area (Putri, 2020). In Indonesia, there have 515 mammal species, 121 bird-tailed butterflies, more than 600 reptile species, 1.519 bird species, 270 amphibian species, and 25.000 flower plant species. (Putri, 2020).

However, most of the population in Indonesia still lacks knowledge of flora and fauna. So, it is necessary to provide supporting facilities in the form of a museum which can be used as a means to introduce flora and fauna in Indonesia.

However, according to CNN News, there are still many that do not reach any standards to accommodate historic collections. This is because Human Resources and funding are still minimal so it is very limited to make improvements to the museum, and the condition of the

museum building which looks old and not maintained. Harry Widiyanto as the Director for the Preservation of Cultural Heritage and Museums of the Ministry of Education and Culture said that museums are divided into three classes, namely class A, B and C. For government-owned museums, most are at the bottom type, namely C. Usually, type C these are the bare minimum. Even though they already have buildings, collections, human resources, they still lack funds so they cannot develop digital networks (Pertiwi, 2016).

The Zoologi Museum, which is located in Bogor, is one of the most historic government-owned museum destinations, considering it was built in 1894. In addition, the Bogor Zoologi Museum is the largest and most comprehensive museum in Southeast Asia (Sotyati, 2014). However, considering the condition of the museum already looks old, so as the years go by, the number of enthusiasts is getting less, so slowly some of the supporting facilities at the museum are closed which is increasingly influencing public interest in visiting the Zoologi Museum. According to Kompas.com, the management of the Bogor Zoologi Museum (MZB), which is still under the auspices of the Indonesian Institute of Sciences (LIPI), is very aware that technology and creativity are needed in overcoming the problem of the increasing lack of visitors to museums in various parts of Indonesia, including the Zoologi Museum.

Prof. Dr. Enny Sudarsonowait as LIPI's Deputy for Science and Life, stated that there are several programs that can be carried out to minimize the problems faced, such as forming communities, using technology, inviting creators, collaborating or collaborating, and holding events. "Yes, especially the Zoologi Museum like this, it's rare for anyone to visit except for school children or students because of their assignments, because they find it less interesting," said Enny (Pranita, 2017).

Therefore, the Bogor Zoologi Museum will be redesigned with a more different concept without leaving the initial impression of the Bogor Zoologi Museum in terms of color, shape and material. Then the Zoologi Museum will later use technology as a means of community interaction. This is based on the problems that occur so that in the future the Bogor Zoologi Museum can also be of interest to the public and not just have a specific purpose.

2. RESEARCH METHOD

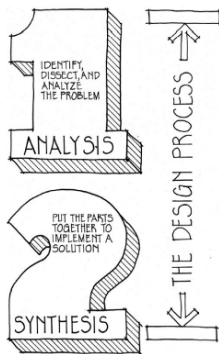
The method that applied in this case is descriptive qualitative method, by adapting the design process of Rosemary Kilmer. According to Rosemary Kilmer, the design process can be into two stages, there are the analysis and synthesis stages (Kilmer, 2014).

The process of data analysis is by theory. At the analysis stage, there are several things that must be done, such as identifying problems, dissecting, studying, researching and analyzing problems. Usually, in this process, the designer initially tries to solve a complex problem that is currently happening and then breaks it down into parts that are easier to process to get to the core points of the problem. from the results of the analysis phase, it is usually made into programming, which is the stage of making supporting data before creating a design concept in the design of the Bogor Zoologi Museum to find a solution to the design.

While the synthesis stage, usually the stages of the previous parts are put together and concluded to get a solution that can be implemented in the design of the Bogor Zoologi Museum. This stage is carried out by making ideas, creating concepts, and finally providing alternatives which can be in the form of design sketches to be chosen as the right solution to a problem that is created.

Figure 1

Design Method according to Rosemary Kilmer



3. RESULT AND DISCUSSION

In the current era, it is necessary to implement museum digitization. This is because the current millennial generation is more interested in digital and multimedia goods, so that digital museums are quite a solution to the main problem experienced by museums today, namely the reduced interest of visitors to museums. This concept utilizes computers to store, combine, retrieve, and present information from various media, which can be used as interactive media for users. Here are some technologies that can be used as interactive media for users (AR, 2019) :

Smart Table

Smart table is a tool that can combine all information about museums into one place without the need to be used as information boards that are spread out in general. By using Smart Table media, space in the room can be used more optimally, such as placing other historical objects or can provide wider space for its users

Augmented Reality dan Virtual Reality

This application is usually designed to add good information about the introduction of art, history, culture, and collections to the public at large. Usually Augmented Reality and Virtual Reality are used in tablets or gadgets.

Artificial Intelligence

It is the most interesting application of technology in museums, for example like chatbots, where it can respond and answer automatically every message and question we send. Several museums have implemented chatbots of historical figures combined with displays of written and oral history accessible to anyone with a smartphone. And with the advancement of robotics, it is also possible to replicate world figures who have died and bring them back to life with the help of AI technology.

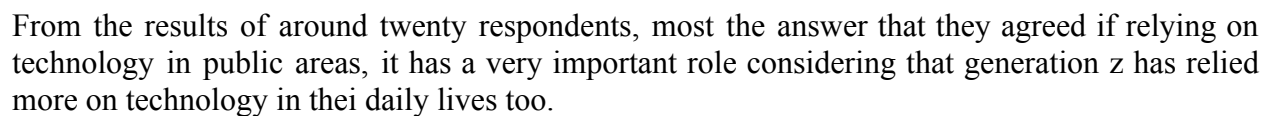
Interactive Media

This technology can control applications with hand gestures directly without the help of other intermediaries. This technology can be applied as Interactive Wall (interactive wall), Interactive Glass (interactive glass), and Interactive Floor (interactive floor).

Mobile Apps

An example of using a mobile application in a museum is Cooper Hewitt's Pen, where this pen is given to visitors when they arrive. With this pen, users can collect and store objects that interest and excite them online.

Figure 2
Survey Form about Bogor Zoologi Museum



The design concept in the interior design of the Bogor Zoologi Museum is modern but given a touch of technology. The concept creates elements of style, theme, and material.

Using a modern style with the addition of a little technology with the aim of adjusting the lifestyle of generation Z which is dominant in using technology. Then this modern style has an image that adapts to today's times. In addition, it uses colors that are mostly natural colors such as blue, brown, green according to the habitat of the museum collection with the aim that users feel as if they are in that habitat.

Figure 4

Bogor Zoologi Museum Design Concept



Material

Most of the materials used are processed wood materials such as MDF. The designer uses MDF as the main material in furniture for collections. The use of this material is because according to Low Cost Furniture Contributors (2018), MDF is environmentally friendly and relatively cheaper than plywood. (Furniture, 2018).

Figure 5

MDF



In addition, designers also use materials such as ceramics and vinyl with wood motifs and some are custom. According to Esra Dopita Maret, ceramics are usually made from a mixture of natural materials, such as clay, powder, elements of earth and water, so they are considered environmentally friendly materials. (Maret, 2022). Meanwhile, Vinyl, according to Irfan Suryadi, Vinyl is more durable, the price is relatively cheap, and the motifs are more varied (Suryadi, 2019).

Several other materials use HPL on walls in certain areas because of their practical installation and high durability (Kania, 2019). the use of HPL and vinyl materials also provides a good acoustic effect in the showroom so there are not too many areas of reflection and reduces excessive echo (Vania, 2021).

Figure 6

Ceramics and vinyl materials



Figure 7

Ceramics and vinyl materials



Implementation Design

The interior design of the mammal exhibition area is made with a concept according to their habitat, namely most of them are on land. The use of technology in introducing mammals and fauna in the form of a Touchscreen Monitor. The use of a Touchscreen Monitor is made with the aim that users can view extensive information that is packaged practically about a mammal and users can also experience the introduction of animals through technology.

Figure 8

Application of technology in mammal room



Figure 9

Using touchscreen monitor as an informative for animals.



Figure 10
Diorama Technology as an interactive media about fauna.



There is an area that uses Technology Diorama, namely animal collection dioramas that are given the help of technology and tools such as tablets where when the user points the tablet at the diorama, the animal collection in the diorama will move to show the animal's activities. This technological concept was created with the aim of users knowing the daily activities of these animals and knowing facts about animals which indirectly increase knowledge and increase user enthusiasm because dioramas are made using a more different technical system following technological advances.

4. CONCLUSIONS AND RECOMMENDATIONS

The museum is a means to store collections that can be remembered or used as a means for education. The Bogor Zoologi Museum plays a major role in the field of fauna in Indonesia. Therefore, the role of technology in the Bogor Zoologi Museum is very necessary considering that the times have increased rapidly. From the results of data taken from several respondents, it can be concluded that > 95% of respondents stated that the application of technology in the design of the Bogor Zoologi Museum was in accordance with the designs that had been made and around 20 and above felt that technology was needed in the current era, especially in the era of the generation z.

At the Bogor Zoologi Museum, it is hoped that visitors will get some information about fauna through the interactive media that has been provided and with the hope that visitors can enjoy, add education and experience and can always return to the Bogor Zoologi Museum.

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