

EXHIBITION SPACE TO LEARNING FOR CHILDREN SCIENCE MUSEUM

Pinyada Rakangtong^{*}, Somboon Vess^{}**

^{*,**} *College of Architecture, Suan Sunandha Rajabhat University, Bangkok, Thailand*

E-Mail: ^{} s 61132523022@ssru.ac.th, ^{**}Somboon.ve@ssru.ac.th,*

ABSTRACT

A study of the guideline for exhibition arrangement to promote the learning of children in the science museum aimed to; 1) arrange the high-quality science exhibition, 2) find the guideline for exhibition arrangement that 5 senses of the audience could be applied for learning, and 3) To arrange the exhibition to promote learning in the digital era.

This study was qualitative research. Data were gathered from the related literature, theory, document, research, and academic article as the secondary source. It emphasized the survey of behavior, learning activity, and in-depth interview. Data were synthesized by the classification and presented the guideline for exhibition arrangement to promote the learning of children in the science museum.

The findings revealed that the concept of “From Past to Future” compared the audience to the explorer learning science through time in the science museum by applying the 5 senses (eyes, ears, nose, tongue, skin, and muscle) for learning and understanding through direct experience. The architectural design in color, shape, furniture, and free space arrangement from the entrance to the exit facilitates the high-quality learning of the audience, and is the guideline for exhibition arrangement that reflex the knowledge effectively.

INTRODUCTION

The exhibition arrangement to promote the learning of children: case of the science museum was a study for improving the effective learning center of science by the exhibition arrangement to promote learning.

The museum is an important lifelong learning center as the national conservation; inheritance of value, uniqueness, and heritage; exhibition of local living, art, and culture; source of specific research including being the lifelong learning center for the community, non-formal education and self-learning (Mananya Nuansri, 2009)

In consequence, the exhibition arrangement to promote learning will respond to the children's requirements appropriately and effectively for the generation in the digital era.

OBJECTIVES

1. To arrange a high-quality science exhibition.
2. To design the exhibition the audience could apply the 5 senses for learning and understanding through direct experience.
3. To arrange the exhibition to promote learning in the digital era.

A study of the exhibition arrangement to promote the learning of children: case of the science museum has studied the related concept, theory, and literature comprising as follows;

1. The arrangement of the learning environment.
2. The principle of designing a process of Brain-Based Learning (BBL).
3. The design of the appropriate environment for brain-based learning by 5 keys.
4. The use of color psychology for children.
5. The condition and trend of a change in the learning of the new generation.
 - 5.1 The trend of future learning.
 - 5.2 The interactive media technology and learning through the exhibition arrangement.

RESEARCH METHODOLOGY

This qualitative research has gathered data from the related literature, theory, document, research, and academic article as the secondary source emphasizing a survey of the behavior, learning activity, in-depth interview, and data were synthesized by the classification and presented the exhibition arrangement to promote the learning of children: case of the science museum.

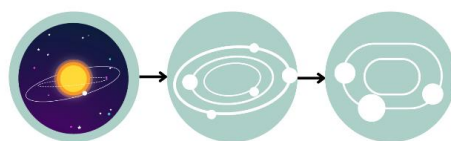
RESULT

A study of the exhibition arrangement to promote the learning of children: case of the science museum revealed that the key factors were the current economic and social conditions as the era of information technology has driven a change in education that traditional education could not support the new generation (Office of Knowledge Management and Development, 2017). The findings have created the guidelines for designing the exhibition arrangement to promote the learning of children: case of the science museum as follows;

1. Concept of the exhibition arrangement

The exhibition arrangement by the simulation, the audience will learn the science story from the past to the future like the explorer learning science through time at the science museum.

The shape that indicates science and astronomy is the “orbit of the star” in the oval and circular motions will entertain the audience with the movement, gentleness, and mysteriousness throughout the science museum (Plearn Wisetwongchai, 2022).



2. Concept of the building layout

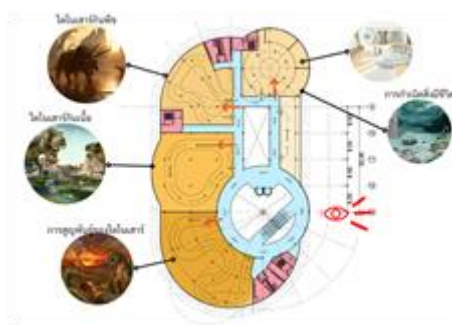
The science museum arranges the science story from the past to the future in 3 sections as shown in the pictures below;



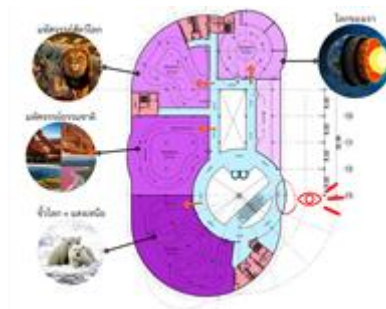
Emphasis on being the intermediary that links and attracts the audience to the past, current, and future

Design the exhibition layout with the central passageway and routing to each section of the exhibition to continue learning

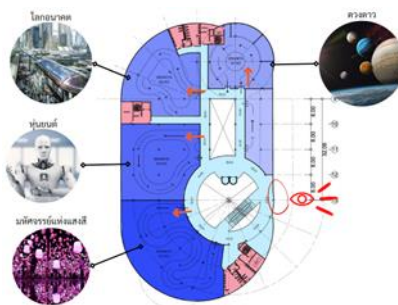
In the meanwhile; storytelling about the past, the beginning of life, and dinosaurs as shown in the pictures;



The current world and science around the world, natural wonders and animals as shown in the pictures;



In addition, the future story, robot, automotive technology, and miracle of color throughout the passageway



3. Concept of the building as the intermediary for the interaction of the audience and nature

The linkage of the inside space and park, the opened hallway on all floors enable the audience to see the outside natural scenery as the maximum benefit of the park and the intermediary for the interaction of the audience and nature.

In addition, the linkage of the classroom and outside space as the movement will freshen up and stimulate the brain and muscles, for example; the balcony, passageway across the buildings, and public space will create wider learning than the classroom (John Dsouza, 2016).

4. Emphasis on applying the 5 senses for learning through the interactive media technology

Interactive media technology is applied in all exhibition arrangements with the computer system effectively between the users and programming system, for example; sound, video, graphic, image, and animation that creates the interactions such as vision, touch, hearing, smell, and communication devices (Atithea Chaetnala, 2020).

The audience will apply the 5 senses for learning things through the eyes, tongue, nose, ears, and skin that affect the thinking, emotion, and development of children in skills, brain, and sensory system consistently (Baby Hills, 2021).

5. Arrangement of an exhibition environment to stimulate the brain-based learning

The exhibition environment could attract and stimulate the audience's learning by using color, shape, and outstanding design, for example; arranging the devices and media on the shelf; decorating the wall colorfully, uniquely, and systematically. Contrasting colors will attract and stimulate curiosity, but the interior should be a light tone avoiding the dark tone that blocks learning.

Providing different places by shape, color, light, groove, hole, niche, and object to create an environment that attracts and develops the children intending to stimulate learning and creativity (John Dsouza, 2016). In the meanwhile, it has to provide the facility and information on restrictions and prohibitions by using the QR code (Somboon Vess, 2019)

CONCLUSION

The findings revealed that the concept of "From Past to Future" by applying the 5 senses for learning and understanding through direct experience. The architectural design in color, shape, furniture, and free space arrangement facilitates the high-quality learning of the audience, and is the guideline for exhibition arrangement that reflex the knowledge effectively.

SUGGESTION

In addition to studying the exhibition arrangement to promote the learning of children: case of the science museum, it should study the facility for the learning of the disability most similar to the normal children.

ACKNOWLEDGEMENTS

I would like to express my sincere thanks to Suan Sunandha Rajabhat University for invaluable help throughout this research.

REFERENCES

- [1] Mananya Nuansri. 2009. **Guidelines for Managing Bangkok Local Museums As Lifelong Learning Resources**. Retrieved August 25, 2022 from https://doi.nrct.go.th/ListDoi/listDetail?Resolve_DOI=10.14457/CU.the.2009
- [2] Office of Knowledge Management and Development. 2017. **New Learning for Current Era**. Retrieved August 29, 2022 from https://www.okmd.or.th/okmd-opportunity/FutureLearningPlatform/899/Digilearn_infographic
- [3] Atithea Chaetnalao. 2020. **Interactive Media Technology**. Retrieved August 21, 2022 from <https://www.spu.ac.th/fac/sdm/th/content.php?cid=3405>
- [4] John Dsouza. 2016. **BBL (Brain-based Learning)**. Retrieved January 9, 2023 from <https://medium.com/@johnharrydsouza/brain-based-learning-2-bbl-brain-based-learning-b7b1bf2e19d7>
- [5] BabyHills. 2021. **Sensory Development in Children**. Retrieved January 9, 2023 from <https://www.babyhillsthailand.com/sensory-development-activities/>
- [6] Plearn Wisetwongchai. 2022. **Psychology of Shapes**. Retrieved January 16, 2023 from <https://www.everydaymarketing.co/knowledge/psychology-of-shapes-andmeaning-to-use-in-marketing-sign/>
- [7] Somboon Vess. 2019. **The Development of Administration and Potential of Cultural Tourism in Suan Dusit and Relevant Areas**. Thailand Science Research and Innovation.