

# Designing a Framework for Multimedia Galleries

Elyna Amir Sharji<sup>1,\*</sup>, Lim Yan Peng<sup>2</sup>, Peter Charles Woods<sup>3</sup>, Koo Ah Choo<sup>4</sup>

<sup>1,2,3,4</sup> Multimedia University

\*Corresponding author. Email: elyna.amir@mmu.edu.my

## ABSTRACT

Concurrent with the advancement of technology, galleries are facing changes in terms of content and context, tools and technology, and visitor experience. This study focuses on the sense of change from static gallery institutions to interactive and engaging multimedia galleries. The concept of sense of place is applied to gauge gallery visitors' perception towards the changes in gallery spaces. The objectives are: i). To determine components of multimedia galleries involved with the sense of change ii). To propose a framework for designing multimedia galleries. A critical literature review of exhibition spaces, visitors' perception and experience will be done in order to understand their sense of place and requirements of engaging spaces. Overlooking interactive visitor experience in physical built environments poses a research issue. Addressing the objectives will assist in closing the research gap while benefitting gallery visitors as users, curators and designers.

**Keywords:** *Gallery, Multimedia Gallery, Sense of Place, Visitor Experience.*

## 1. INTRODUCTION

"A museum is a non-profit, permanent institution in the service of society and its development, open to the public, which acquires, conserves, researches, communicates and exhibits the tangible and intangible heritage of humanity and its environment for the purposes of education, study and enjoyment." - International Council of Museums (ICOM).

Museums and galleries are essential places allocated for activities that are usually related to tradition and heritage, art and craft, technological and academic purposes. They are keepers of knowledge and history, artistic and aesthetic ventures as well as academic nodes. The function of exhibition spaces has changed in the last few decades in keeping up with the demands of society. The transition from collectors to serving educational platforms such as conducting lectures, workshops, discourses and talks has transformed gallery spaces into a dynamic setting of meaningful institutions shaping the context of their inhabitants [1]. Types of gallery are divided into tangible and intangible entities or physical and virtual. An existing space based on physicality is connected to the built environment. Virtual galleries incorporate multimedia platforms which involve artificial intelligence, cyberspace, three dimensional environment and virtual reality.

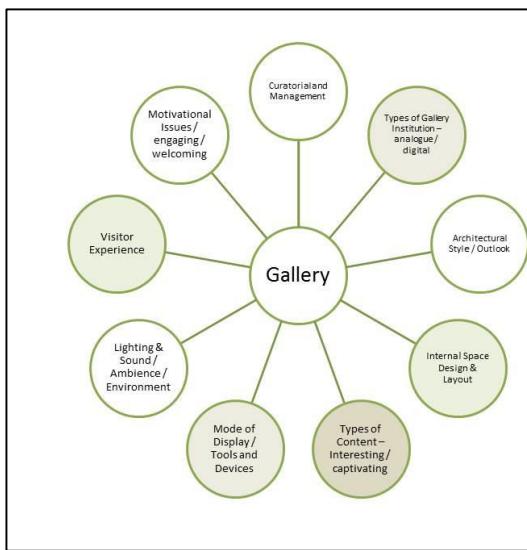
With the advancement of technological changes, a sense of change is felt in a majority part of our lives. This is evident from observations of change from static conditions to interactive modes. Exhibition spaces are currently facing these changes too. All of the components that make up gallery spaces are interrelated and they function simultaneously. In facing the changes from passive to active interaction and engagement, each of the gallery components is affected. Therefore, the need to study these changes and the readiness of exhibition spaces to receive changes is crucial. Overlooking the readiness of gallery spaces to cater for multimedia platforms poses a research gap and an issue. Designing a framework for multimedia gallery design will assist in closing this research gap. This is done through the perspectives of visitors' perception and experience. In gauging their acceptance of the changing spaces, the theory of a sense of place and other related concepts are used to come up with a theoretical framework for this research.

## 2. LITERATURE REVIEW

### 2.1. Research Background

Components of exhibition spaces include curatorial and management, types of gallery (analogue and digital), architectural style, internal design and space

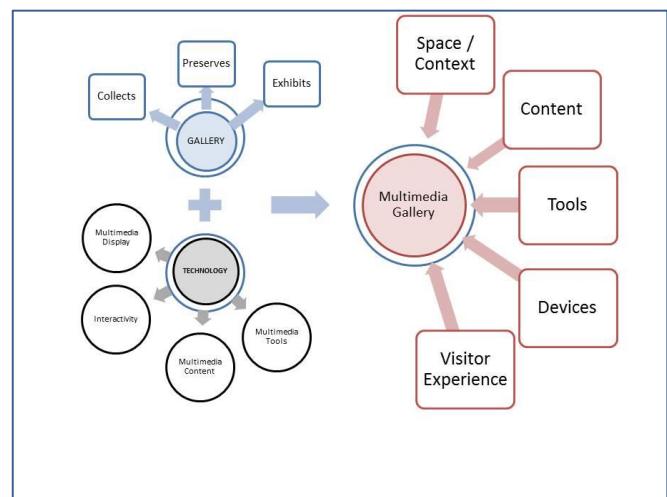
layout, types of content, mode of display / tools and devices, lighting and sound / ambience, visitor experience, motivational and engaging issues and others. This study concentrates on content and context, tools and devices as well as visitor experience.



**Figure 1** Components of exhibition spaces

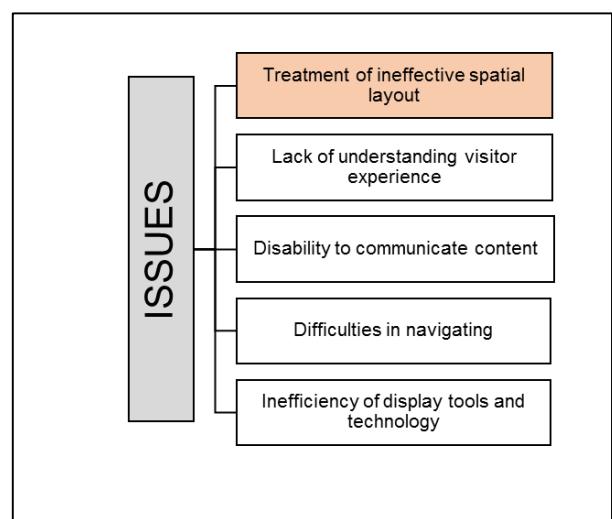
## 2.2. Progression of Exhibition Spaces

Harada et al. stated that the responsibilities of museums (exhibition spaces) have exceeded the functions of conventional objectives of collecting, preserving and researching. There is a need to understand what museums are facing nowadays and ways to find solutions in upgrading and enhancing visitors' experience [2]. Simpson et al. mentioned that changes include interactivity, audience-focused, community-oriented, flexibility, adaptability and mobility. These spaces are now cultural hubs that combine knowledge with creativity. Visitors co-create and interact with the multimedia content which is a change from conventional exhibits [3]. The usage of digital tools and devices for multimedia content is rapidly being implemented as an approach to address these changes. Biagi stressed that multimedia tools such as computers, kiosks, video projectors, touch screens and flat video panel display screens, internet surfing, interactive devices, immersive virtual reality systems and holographic theatres are utilized [4]. These implementations enable possibilities in various activities apart from exhibitions. The progression aids seminars, workshops, demonstrations, talks and other related platforms in a new approach as they are supported by appropriate tools and devices.



**Figure 2** Transition of multimedia gallery

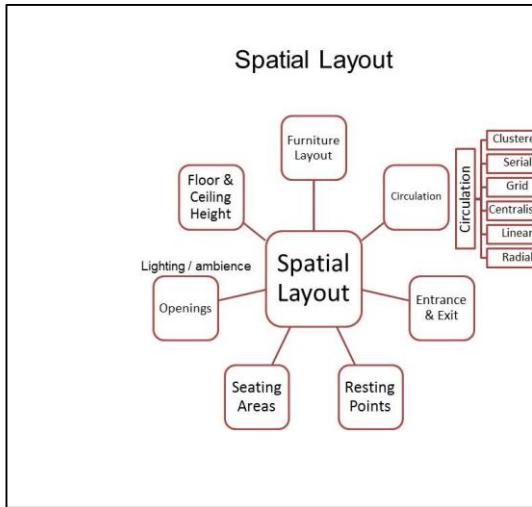
With this progression, issues pertaining to multimedia gallery are brought up which include ineffective spatial layout, difficulties in content communication, difficulties in navigating, inefficiency of display tools and technology and lack of visitor experience understanding.



**Figure 3** Issues in multimedia gallery

According to Matthews, there are factors that underline space requirements as in items of display, exhibit size and types of showcase. These items will then indicate the public and private spaces, functional and servicing spaces, permanent and temporary areas, passive and active modes of display areas as well as other uses such as amenities allocation and others [5]. With technological enhancement, spatial layout faces changes and challenges of design treatment to cater for digital content, tools and devices. Components of spatial

layout which will be taken into consideration include furniture layout, circulation, entrance and exit, resting points, seating areas, opening, lighting and ambience as well as floor height and ceiling. He underlines six types of space configurations which are clustered, serial, grid, centralised, linear and radial.



**Figure 4** Spatial layout components

In addition to a normal gallery setting, a digital gallery would involve designing spaces for virtual environments [6], which require a physical setting, a functional context, a social setting and interactivity [7]. Lawson stated that spaces are parts of settings arrangements in ‘the Language of Space’. These settings are very much influenced by limitations and characteristics consisting of the spaces around it and the activities of the inhabitants [8].

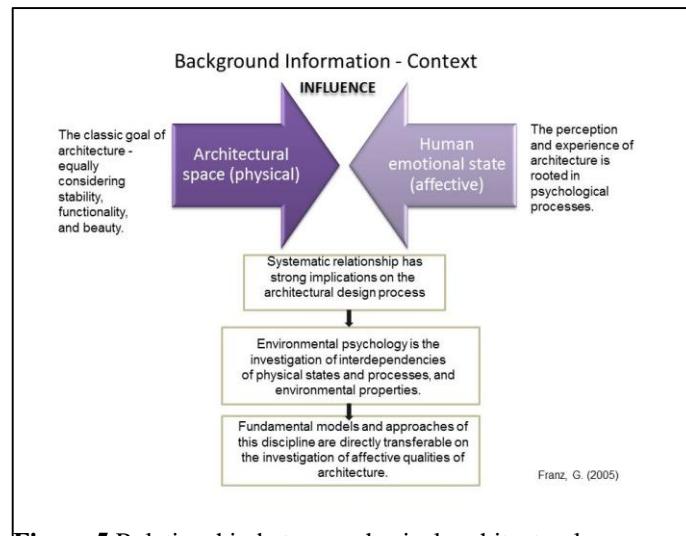
### 2.3. Objectives of Research

- i). To determine components of multimedia galleries involved with the sense of change.
- i). To propose a framework for designing multimedia galleries.

## 3. CONCEPTUAL FRAMEWORK

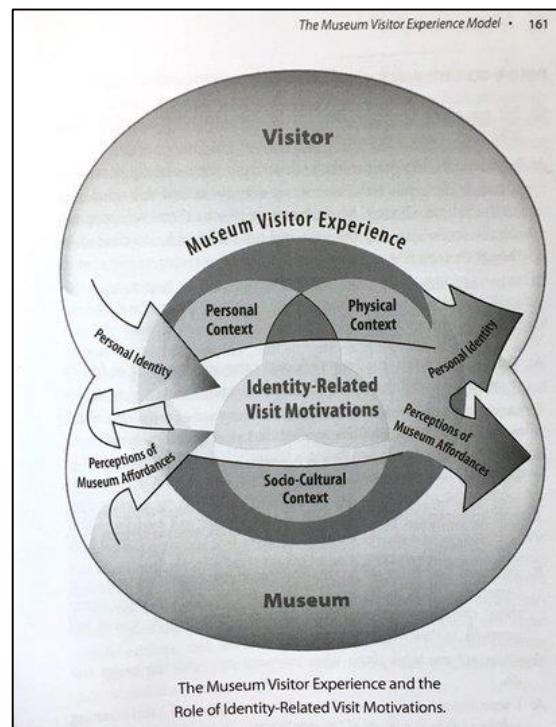
### 3.1. Models, Theories and Concepts

Related theoretical models, theories and concepts are referred to in order to build the conceptual framework.



**Figure 5** Relationship between physical architectural space and affective emotional state [9]

The relationship in Figure 5 shows that physical space has a strong influence on the affective emotional state of a visitor’s experience. Changes in the spatial layout design will influence a visitor’s experience in an exhibition space.



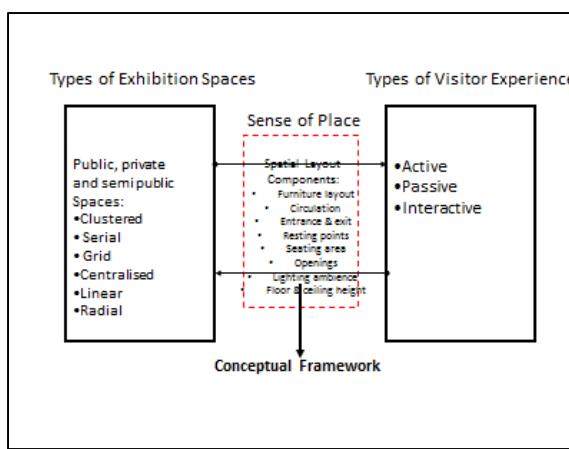
**Figure 6** Museum Experience Model (Falk and Dierking, 2013)

Falk and Dierking in Figure 6 illustrates that exhibition spaces provide the visitors an insight from tangible entities, social environment, and individual perceptions. The model above informs of individuality outputs different experiences where visitors have their own preferences, affected differently by the built environment thus makes preferences that they would

like to be in. The connection of emotional value with every memory of a place linked to the human brain triggers to us as something meaningful [10]. Visitors' behaviours that are actively communicating need associations with the space layout, furniture and pathway configurations to be able to browse cohesively. Visitors come from all age range with a variety of background knowledge [11].

### 3.2. Building the Framework

By assessing the context which is types of exhibition spaces (public, private and semi-public in the six exhibition layouts) and visitor experience (active, passive and interactive), we are able to create a guideline in designing the conceptual framework. Sense of place theory is used to assess this relationship. The theory of sense of place is the relationship between man, his image and environmental characteristics. Individual and collective understanding perceptions influence sense of place and vice versa, sense of place influences behaviour patterns and values. People usually participate in social activities according to their sense of place [12].



**Figure 7** Conceptual Framework

## 4. CONCLUSION

This study focused on the building up of the theoretical framework which is based on related research, models, theories and concepts on exhibition spaces. This is to establish the components of multimedia galleries that are affected by the sense of change. The proposed framework for designing multimedia galleries is the objective of this research. For future works, the application of the models, theories and concepts that have been reviewed to establish the conceptual framework will be further researched. This is to indicate that the developed conceptual framework is

deemed comprehensive and responsive to the objectives, and has potential for further application.

### 4.1. Future Works

By classifying and identifying visitor experience through observation study and surveys, visitors' behaviour and perceptions can be analysed. Characterizing types of visitor experience will lead us to understand better their sense of place, acceptance, understanding and satisfaction. Respondents will be observed on their flow of route and circulation; tracking, timing and response on different types of exhibition mode and activities (static, dynamic and interactive). Questions involve satisfaction in browsing exhibition items, understanding of what is being exhibited, comfortability in the ability to move and experience the exhibition, ability to feel the emotions intended, able to identify oneself with the surrounding, content and technology, visitor interaction with exhibition content, visitor interaction with other visitors and feeling of return visits. Diagrammatic and descriptive analysis will be obtained and findings will lead to confirming the framework for future application.

## ACKNOWLEDGMENTS

The authors would like to thank contributors, staff and students from the Faculty of Creative Multimedia for their invaluable thoughts, knowledge and inputs throughout the research process.

## REFERENCES

- [1] D. A. Varitlova, Museum as an element of multicultural space in: Proceedings of the IOP Conference Series: Materials Science Engineering, 2019. DOI:10.1088/1757-899X/698/3/033032
- [2] T. Harada, Y. Hideyoshi, E. Gressier-Soudan, C. Jean, Museum experience design based on multi-sensory transformation approach in: Proceedings of International Design Conference, DESIGN, 2018.
- [3] A. Simpson, A. Fukuno, H. Minami, University museums and collections as Cultural Hubs: The future of tradition, University Museums and Collections Journal, Volume 11 No.1 2019. ISSN 2071-7229, 2019.
- [4] S. Biagi, Media Impact, Thomson Wadsworth, 2005.
- [5] G. Matthews, Museums and Art Galleries, Butterworth Architecture, 1991.
- [6] V. Bourdakis, Teaching Virtual Environment Design in: Proceedings of the 20th Conference on

- Education in Computer Aided Architectural Design in Europe, Drukarnia Braci Ostrowskich, 2002.
- [7] O. Rivka, On E-Learning in Cyberspace in: Proceedings of the 20th Conference on Education in Computer Aided Architectural Design in Europe, Drukarnia Braci Ostrowskich, 2002.
- [8] B. Lawson, The Language of Space, Architectural Press, 2001.
- [9] G. Franz, An empirical approach to the experience of architectural space, Thesis Dissertation, Bauhaus University, Weimar, 2005.
- [10] J. Falk and L. Dierking, Museum Experience as defined by John Falk & Lynn Dierking: Rethinking Museums from a Visitor's Perspective, 2013, [online] Available at : <https://fr.slideshare.net/RubenSmit/museumexperience-as-defined-by-john-falk-lynn-dierking-2013>
- [11] C. Paul, The Myth of Immateriality: Presenting and Preserving New Media, in: O. Grau, Media Art Histories, Cambridge, Massachusetts, London, England: The MIT Press, 2010.
- [12] D. Canter, The Psychology of Place, London: The Architectural Press Ltd., 1977.