

THE EFFECTIVENESS OF EXPERIMENTATION AND OF TECHNIQUES IN FORMING THE ART OF DIORAMA: APPLIED RESEARCH

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Abstract

The current research aims to identify the importance of experimentation in diorama art techniques and models, whether in museums or as means of facilitating learning in schools and universities. Therefore, in the first chapter, the researcher presented the research problem and reached his goal in revealing how technical experimentation worked in enhancing the topics of diorama art and the artist's interaction with diorama art in performance methods and technical experimentation. As for chapter two; The researcher divided the chapter into two topics: technical experimentation in artistic work and scientific models, and topic two: the art of diorama features and characteristics, shapes and characteristics of diorama and its various uses in the fields of knowledge and science in building the external appearance, and the research presented in chapter three technical experimentation and the art of diorama. chapter four, the researcher presented the results and conclusions, including: The importance of technical experimentation in the formations of diorama art is highlighted through the case of testing and experimenting with materials and the multiplicity of sources of their presence in order to increase the effect of understanding the general form and the subject to be conveyed to the mind, then the researcher presented recommendations and proposals.

Keywords: Experimentation. Techniques, dioramas, models, scientific models.

Introduction

Chapter One

Research Methodology

Research Problem

The research problem stems from identifying the importance of experimentation in diorama techniques, models, and scientific replicas—whether in museums or as educational tools in schools and universities. Technical experimentation in surface treatment, materials, and methods of execution requires a level of skill to reveal the spatial and functional aspects of the art of diorama. Accordingly, the research problem can be summarized through the following questions:

1. How can technical experimentation be employed to enhance topics related to the art of diorama?
2. How does the artist interact with the art of diorama in terms of performance methods and technical experimentation?
3. What is the mechanism through which the importance of technical experimentation in the art of diorama can be activated?

The aim of the research is to identify technical experimentation in the art of diorama.

The research limits are:

- **Objective limit:** The art of diorama.
- **Temporal limit:** Applied sample from 2020 to 2022.
- **Spatial limit:** Natural History Museum, Baghdad.

Definition of Terms

Experimentation

Ibn Manẓūr defined the term in Lisān al-‘Arab as follows:

“**Jarraba** a man a **tajriba**: to test. He is an experienced man who has known and tried matters. Dārum mujarraba: balanced.”

(Ibn Manẓūr, 1997, p. 261)

The term experimentation appears in the Latin word **Experiment**, which means rehearsal or trial. Saeed Yaqteen defined experimentation as “excessive engagement in the practice of transgression.”

The concepts of experimentation vary, yet generally revolve around:

- Attempt or trial
- Transgression or breaking the familiar
- Innovating new values

Technique (Language)

Linguistically, technique refers to mastery and precision. Atqana a thing means to perfect and refine it. Al-itqān means executing things with precision.

(Ibn Manẓūr, 1997, p. 615)

Technique is an organized, non-spontaneous means influenced by material and social environments. It is the product of mental and manual design of a set of tools used for practical purposes to meet needs that arise within specific social conditions.(Ibraheem Ahmad, 2006, p. 97)

It is also defined as a set of methods and skills in performance and action, requiring the use of tools and materials in a specific way, or a combination of integrated methods.

(Lalande, 2008, pp. 1428–1429)

The Art of Diorama

A diorama is a full-scale or miniature three-dimensional replica of a scene, sometimes placed inside a museum display case. Hobbyists often build dioramas as part of related activities such as military vehicle modeling, miniature figure modeling, or aircraft modeling.

(en.wikipedia.org/wiki/Diorama)

Chapter Two

Theoretical Framework

Section One

Technical Experimentation in Artwork and Scientific Models**

The ideas and contents, in terms of their physical form and appearance within the artwork, move through the essence of technical experimentation, whether in the material itself and the methods of its treatment or in the act of performance. Through this process, the experimental artist frees himself from the metaphysical perception of creativity, moving instead toward the answers offered by the power of testing and experimentation (Kierkegaard, 2013, p.19).

Thus, technical experimentation becomes a manifestation of cultural transformation, revealing the properties of the material and the nature of form—elements that serve as the foundations for producing the subject of scientific models or artworks (Figures 1, 2, 3).

Therefore, the importance of technical experimentation lies in uncovering the secrets of materials and their treatments in ways that align with the subject, enabling the artist to produce textures or qualities that are unique to the artwork. The task of art is to gather as much as possible of the visual and auditory sensory experience, with the ability to connect to the viewer's mind in order to create the highest possible level of stimulation (Munro, 2014, p.313).

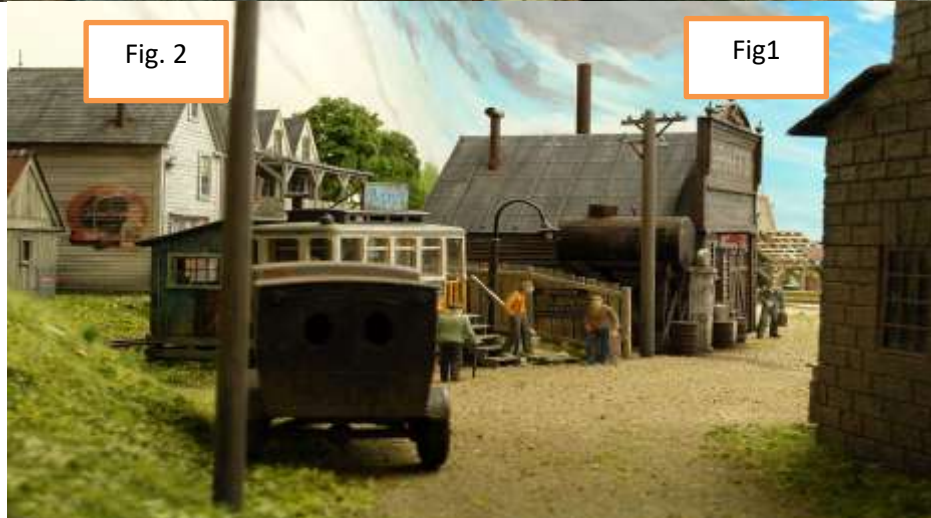


Fig 3

The technical experimentation in constructing the compositions of an artwork means altering the physical properties of materials and employing them in a way that serves the imagined image of the subject, with the aim of creating a perceptual form that emerges from the material or medium itself (Figures 4, 5, 6).



Fig 5



Fig 4



Fig 6

The effectiveness of technical experimentation in contemporary works and postmodern art trends has become evident, employing the metaphors of diverse materials and textures. The artist interacts with visual and auditory stimuli, utilizing and reconstructing various materials as raw materials, highlighting the need for their reproduction in scientific models or the embodiment of consciousness in surface construction (Mahmoud, 2020, p. 15).

Technical experimentation in art is driven by the desire to evoke a sense of beauty and provide an element of pleasure and appreciation, contributing to the development of the skill of engaging with the artwork through the diversity of surfaces and materials (Figures 7 and 8). This stems from the understanding that "the fundamental motivation for progress in various fields of life is the feeling of creative energy, which art, in its various forms, provides" (Abbas, 1987, pp. 12 and 13).



Fig 9



Fig 8

The data of technical experimentation in dealing with the physical surfaces of artworks has advanced in order to increase the element of excitement and connection with the sense of sight of the recipient, so that the formations on the surface are occupied with the element of difference and contrast (Figure 9, 10). The movement of technical experimentation has been linked to important transformations in styles from modernism to postmodern art, and even in the formulation of scientific models that have taken forms that vary and differ according to the subject and place of display (Figure 11, 12). The artworks in one place differ in their techniques and blackness from another place due to the difference in the environment and the availability of a material or energy (Figure 13, 14). Therefore, "technical experimentation has subjected surfaces, materials and raw materials to a state of testing and experiments that aim to reveal the features and properties of each technique" (Al-Mulhim, 2003) in order to identify their possibilities and ways of adapting them in accordance with the idea or subject (Figure 15, 16).



Fig 10



Fig 9



Fig 12

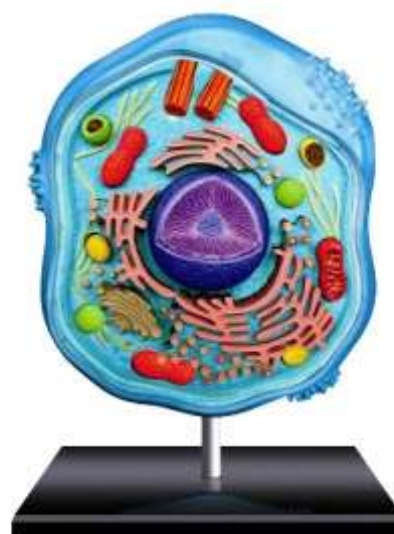


Fig 11



Fig 14



Fig 13



Fig 16



Fig 15

Section Two

The Art of Diorama: Features and Characteristics

The art of diorama takes a case in employing environmental subjects that are concerned with documenting events or subjects related to changes occurring in the environment, such as models of the earth's layers (Figure 17) or subjects in representing mountains, rivers, and oceans in the form of small models that are placed in tanks (Figures 18, 19). The art of models and diorama is nothing but (an aesthetic and functional construction that presents, through a tangible form, events and environments in reality that have historical roots and connections, or carry a scientific concept or a story in historical events, or the creation of a diorama model that expresses a place) (Mahmoud, 2020, p. 5) (Figures 20, 21). The art of diorama has been used in many international museums, engineering, construction, and architecture to facilitate viewing models before implementation (Figures 22, 23). Diorama is also used extensively in cinema scenes today due to reducing costs and production (Figures 24, 25).



Fig 18



Fig 17



Fig 20

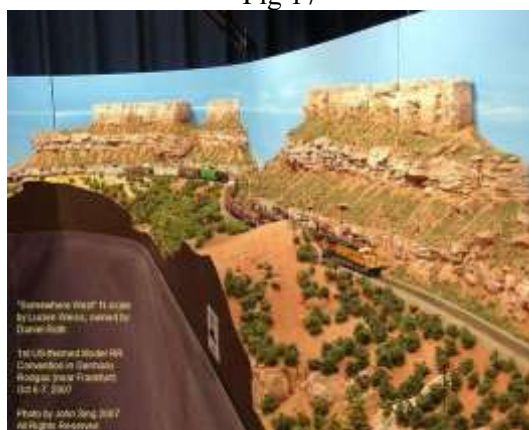


Fig 19



Fig 22



Fig 21



Fig 24



Fig23

Fig 25

Dioramas were used to present a visual image of the most famous cities in the world, since a diorama is nothing but a medium for displaying a scene in (a limited but cohesive environment that carries great details in its occupations, from architecture to cinema to the design of city facades in a three-dimensional form) (Dunk, p17) (Figure 26, 27).



Fig 26



Fig 28

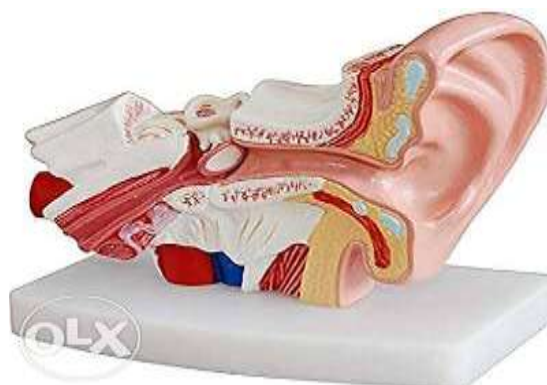


Fig 27

In the art of diorama, the designer must experiment with materials and textures to construct a striking physical appearance characterized by creative beauty, visual appeal, and viewing pleasure. Therefore, diorama art focuses on studying the finest details, constructions, and

compositions, taking into account precise calculations of material properties. Thus, dioramas in environmental settings differ from those in educational settings, entertainment venues, or medical fields, which facilitate the explanation of complex subjects through illustrative aids that highlight their importance (Shakir, 2016, p. 135) (Figures 28, 29).

Chapter Three

Technical Experimentation and the Art of Diorama

Technical experimentation involves shaping the raw material according to the requirements dictated by the diorama's subject matter itself, as the diversity of subjects leads to variations and diversity in working mechanisms (Smith, 1988, p. 177). This experimentation begins with creating a map that illustrates the type of experimentation (Figure 30). The combination of wood, cork, and sand, creating a unified entity that allows for visual observation, is a technical experiment imposed by the necessity of the subject, as the model of an environment... The marshes had to be closely connected to the aquatic environment, with its varying colors of reeds and boats (Figures 31, 32). Therefore, light was used to showcase a diverse range of materials, representing objects, forms, and the aesthetics of texture, color gradation, shadow, and light (Abd Al-Wahhab, 2007, p. 140).

Meanwhile, in the diorama of the Tar Caves (<https://ar.wikipedia.org/wiki/>) /the texture of the stone was employed and manipulated through technical experimentation. This involved evoking texture and color, intensifying the element of light, and varying the projection of shadows with differences in size to ensure rhythm and proportion in the composition (33, 34). Thus, the viewer's technical impact is achieved through interaction with symbols and concepts, enabling them to form their own vision of a particular subject or aesthetic form with which they engage (Abd Al-Hamid, 1987, p. 13). The art of diorama involves arranging and organizing vocabulary, objects, beings, and models according to their aesthetic function or to explain a scientific subject matter. All of this is subject to technical experimentation that assumes a kind of objective unity in the techniques of displaying the general form (Figure 35, 36). It is subject to objects and produces symbolic effects in existence (Ali, 2004, p17).



Fig 30



Fig 29



Fig 33



Fig 32



Fig 31



Fig 34



Fig 35

Chapter Four

Results and Conclusions

1. The importance of technical experimentation in diorama art is highlighted by the testing and experimentation with materials and the diversity of their sources to enhance comprehension of the overall form and the intended message.
2. The importance of technical experimentation is revealed through the variety of surface textures, which serve as illustrative tools for the subject and compositions within a lesson, museum, or historical or social setting.
3. Diorama art transforms from an aesthetic form into a functional and utilitarian force, presenting a dazzling, brilliantly rendered, and captivating image, from the marshes to the desert to the caves of Tar.
4. Diorama art offers scientific knowledge that stimulates the imagination and enhances memory, as tangible objects have the ability to enter and remain in the mind more deeply.
5. Technical experimentation in diorama art has yielded a variety of materials and textures depending on the subject and composition being created.
6. Technical experimentation relies on accumulated experience in studying composition and the type of rough or smooth texture to create a diorama that is both vibrant and harmonious with its surroundings.
7. Technical experimentation is subject to a transformation in the form of the material and substance, tending towards a state of unity within diversity.

Recommendations and Suggestions:

The researcher recommends:

1. Establishing a cultural center specializing in diorama art, whose mission would be to create models that facilitate information and learning through their tangible presence.
2. Organizing group exhibitions of diorama art and encouraging schools and universities to increase the use of visual aids in explaining complex scientific material.
3. Creating dioramas depicting the environments and forms of Iraqi civilization.

The researcher suggests conducting the following studies:

1. Experimentation and testing in contemporary art.
2. Diorama art and the representation of scientific knowledge (model creation).
3. Technological transformation in diorama art.
4. The diversity of materials and the variation in form in diorama art.

References

1. Smith, Edward Lucy. (1988). Artistic Movements after World War II. Translated by Fakhri Khalil, Dar Al-Ma'moun, Iraq, p117. (in Arabic)
2. Al-Mulhim, Ismail. (2003). The Creative Experience: A Study in the Psychology of Communication and Creativity. Publications of the Arab Writers Union, Damascus, Syria, p 9,13. (in Arabic)
3. Munro, Thomas. (2014). Evolution in the Arts. Translated by Muḥammad Ali Abu Durrat and Luwis Iskandar Jirjis, published by the General Authority for Cultural Palaces, Cairo, Egypt, p313. (in Arabic)
4. Ali, Ḥusayn. (2004). Logic and the Art of Thinking. The Egyptian Saudi House, Cairo, Egypt, p17. (in Arabic)
5. Abbas, Rawiyah Abd al-Munim. (1987). Aesthetic Values. University Knowledge House, Alexandria, Egypt, p12,13. (in Arabic)
6. Kierkegaard, Soren (2013). Repetition: An Essay in Experimental Psychology. Translated by Mujahid Abd al-Munim Mujahid. Cairo Dar al-Kalimah Library for Publishing and Distribution, Egypt, p19. (in Arabic)
7. Abd Al-Ḥamid, Shakir. (1987). The Creative Process in the Art of Painting. Knowledge World, Kuwait, 1987, p13. (in Arabic)

8. Abd Al-Wahhab, Shukri. (2007). The Scientific and Theoretical Bases for the Study of Light Design. Huras International Foundation, Egypt, p140. (in Arabic)
9. Shakir, Muhammad Khalid. (2016). Technical Systems in the Art of Designing Interior Spaces. Master Thesis, University of Baghdad, Fine Arts, Design Department, Baghdad, Iraq, p135. (in Arabic)
10. Dunk, Widkas. The Art of Stereotypes. Translated by Amal Al-Hasani, The Scientific Library, Cairo, Egypt, p17. (in Arabic)
11. Mahmoud, Waad A. (2019). Technical diversity in the work of scientific models Natural history museum as a model. Journal of the college of basic education. Volume 25, Issue 105, DOI: 10.35950/cbej.v25i105.4774. p5. (in Arabic)
12. Mahmoud, Waad A. (2020). The Use of various materials in construction of the museum models in the exhibition hall (Museum of Natural History) Applied research. Volume 3 Issue 38, DOI: <https://doi.org/10.31185/lark.Vol3.Iss38.1496>. p15. (in Arabic)
13. Ibn Manẓur. (1997). Lisan Al-Arab. Dar Ṣādir for Printing and Publishing, Beirut, Lebanon, Volume 1, 1997, Article (J.R.B), p261.
14. <https://en.wikipedia.org/wiki/Diorama>.
15. Lalande, André. (2008). Lalande Philosophical Encyclopedia. Translated by Khalil Ahmad Khalil, Aweidat Publications, Volume 3^{ed}, Beirut - Paris, pp 1428, 1f429. (in Arabic)