

The Effectiveness of Technical Multiplicity in Enrichment of the Creative Aspects of Design Surfaces

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Research Summary

Technology is one of the design processes that give the idea its physical existence, where it is one of the most important means of visual attraction because of its influential capabilities in terms of form, function and material, which help the designer to communicate his ideas according to the systems he adopts to show the aesthetics of the design building. The scientific and technological development has led to the presentation of more techniques before the designer's thought and imagination, and helped in the emergence of multiple creative methods, where each type had different specifications and varying limits of possibilities, which necessitated the awareness of such diversity and plurality and the relationship of each to the other, and the realization of their aesthetic and creative values in order to be able to choose the appropriate ones, which opens the horizons of experimentation and the discovery of modern techniques and materials enriching the design creative thought, and a successful creative designer in the field of design is one who possesses the knowledge and ability to professionally deal with many techniques that enable him to design and produce works of the best possible quality, develop his abilities and find solutions to many of the problems he faces in the field of design and present new creative cases.

Hence, the research problem is determined in investing the increasing development in techniques with the scientific and technological progress and the resulting diversity and multiplicity of methods and techniques in the field of design and combining several techniques to find various creative solutions to enrich the design surfaces, through procedural steps based on the tools of the descriptive analytical approach, to follow the development of technologies in design trends in the period of modernity and beyond, and to study selections of technical patterns and their impact on design construction and enriching the creative aspects of design surfaces, where the research reached several results, including:

- Exposing the multiplicity and diversity of design methods and techniques in the period of modernity and beyond.
- Cognitive awareness of the limits and capabilities of design techniques and the optimal use of them.
- The combination of patterns of techniques for design trends enriching the creative aspects of design surfaces.

Key Words

Technical multiplicity, creative aspects, design surfaces.

Research Background

Technique is one of the basic components of the artistic creation process, where it is not just a method for forming the material, but an end in itself, as it possesses special qualities that help

to form the aesthetic subject, and it is one of the most prominent concerns of contemporary design.

Design is defined as a translation of a purposeful idea related to the means of implementation, meaning that design is the entirety of the successive processes and stages that lead to a design result achieved by the action of many and varied techniques that differ in their design and demonstration methods.

A technique is one of the important design processes that give the idea its physical existence, as it is the appropriate combination of skills, information, scientific and cognitive theories that are used in converting raw materials into products, as it is the embodiment and collection of knowledge, experiences and skills in the form of a design product.

Therefore, "technology, in all its intellectual and performance meanings, is a means of achievement that the designer uses with an artistic vision to achieve the design goal, and without the technology and the development that occurred in it, designs would have remained mere ideas and plans" (1).

The concept of technology in modern design has changed with the scientific and technological advancement in the field of production of raw materials and tools that increased the creative capabilities of the designer in identifying its materials, which gave the plastic and imaginative capabilities new dimensions and visions, the designer used many new techniques to form the formulas of visual perception. "One of the modernity features is the technical revolution, as the technical construction in the design painting has become a goal and an end to become a technical form among material, color and plastic construction" (2- P.75).

The exploratory ambitions of the designer increased during the last quarter of the twentieth century, which was characterized by dynamism and rapid change in concepts and perspectives, and the emergence of new theories in different fields and knowledge systems, which led to the introduction of more new technologies in before the designer's thought and imagination, and contributed to the emergence of multiple creative methods, as technology has imposed itself strongly, and made several changes in the field of design, so that the designer no longer needs the traditional means to produce for us a design painting. These digital data gave him a present full of all contemporary creative elements and established a new culture.

"With the advent of digital technology, many designers have tended to use it to achieve what cannot be realistically achieved. This technological progress and the innovations and creations associated with it helped to elevate the design and make it into a renewed creativity" (3- P.13), as the creativity provided by the new digital technology promises of radical changes in the aesthetic design, and so the design became dependent on the presence of many options for technology, and a successful designer is the one who possesses the knowledge and ability to professionally deal with many techniques that enable him to design and produce his work in the best possible quality and find solutions to many problems that he faces in the field of design and to introduce new creative aspects.

Since technical multiplicity is an important source for the various implications of creative thinking, the research focused on studying technologies and their impact on the creative aspects of design surfaces, and showing how to integrate technical patterns to reach the creative values sought by the designer, and the research also touched upon the study of developments in the technical fields of design trends in the twentieth and twenty-first century, where he presented a number of creative works that technology contributed to achieving and aimed at finding solutions to enrich the creative aspects of design surfaces by combining several techniques,

whether manual design techniques or computer design techniques, or both, to reach the discovery of new solutions to enrich the physical appearance. For design and the growth of creative thinking and plasticity of the designer and this research is considered an entry point to expand the horizons of innovation and creativity based on plurality and the integration of technical patterns of design trends in the period of modernity and beyond.

Research Problem

The research problem lies in the challenges facing the designer to find creative solutions to enrich the design surfaces - to invest and keep pace with the increasing development of technologies arising from the scientific and technological development, and the resulting diversity and multiplicity of design methods and techniques that were able to present new creative cases in the period of modernity and beyond. The type of different specifications and the limits of different possibilities, which achieved the necessity of familiarity with that diversity and the relationship of each other, and the technical multiplicity and the possibility of combining multiple technologies at the same time did not receive sufficient attention from descriptive study and academic research in the fields of design despite its effectiveness to enrich the creative aspects of design surfaces.

The research focuses on revealing the multiplicity and diversity of design techniques and trying to combine them, which enriches the creative aspects of design surfaces, and from here the following question emerges:

What is the effectiveness of technical multiplicity in enriching the creative aspects of design surfaces?

Research Importance

To monitor, classify and analyze technical patterns of some design trends in the period of modernity and beyond, and clarify their multiplicity and variation in their capabilities, characteristics, methods of mixing and how to employ them in enriching the creative aspects of design surfaces.

Research Objectives

- Exposing the technical multiplicity of design trends in the period of modernity and beyond.
- Enriching the creative aspects of design surfaces through technical diversity.

Research Hypothesis

What is the possibility of using technical multiplicity to enrich the creative aspects of design surfaces?

Research Methodology

The current research relies on both the descriptive, analytical and experimental approach as follows:

1. *Descriptive and analytical approach*

Through tracking the development of technologies in design trends in the period of modernity and beyond, and the analytical study of selections of technical patterns and their impact on design construction, and how to use them as approaches to enrich the creative aspects of design surfaces.

2. *Experimental approach*

Where the researcher conducts self-experiments to achieve the objective of the research and to ensure the validity of the hypothesis, and that is through theoretical and practical study as follows:

First: Theoretical framework

- 1) Technique and Design;
- 2) Technique and creativity
- 3) Technical patterns of design trends in the period of modernity and beyond.

Second: Practical framework

Carrying out technical self-applications on the research topic.

Research Terminology

Design surfaces: The research defines the term design surfaces in a procedural definition, as it is the physical appearance of the design, and the two-dimensional visual field on which the basic design elements are organized, including points, lines, areas, volumes, colors, textures, and material within a certain framework, and this organization results in relationships that achieve aesthetic and creative values that distinguish each work from the other, and the design surfaces vary in their materials and shapes.

First: Theoretical framework

1) *Technique and design*

Definition of technique

Technology refers in its philosophical and linguistic significance to the meanings of art, industry, control of production and mastery, and that it is the collection of the means and methods that pertain to a profession, art or craft, so the *Linguistic Complex* defines it as "the set of processes that any artistic or industrial work goes through until it becomes an existing work. The term technique is not limited to craftsmanship or manual ingenuity in the production of any work, but rather it means many aspects of the creative process of the designer starting from the conception of the idea until the work is achieved in its final form.

Definition of design

"Design is the development of a plan to fulfill a human need, and the application of techniques to transform resources into a product that meets the needs of society."

"Design is an innovative and creative process that is guided by the human being to find something new, and it is here in two phases, the first is creative and the second is executive).

From the previous definitions of both technology and design, we find that the relationship of technologies to design is a close relationship, as it expresses the knowledge contained in technical designs, the method and tools that make this design possible, and the set of methods and procedures that bring design into existence, and technology is a complex process, it begins from the designer choice of the philosophy followed in the design through his choice of design elements and foundations and their formulation together and the added values that the designer uses in implementing his design idea.

2) *Technology and creativity*

Creativity, idiomatically, is to establish something from something, that is to create something new from previously existing elements such as artistic creativity and scientific creativity.

The British Encyclopedia has defined creativity as the ability to find solutions to a problem or a new tool or the impact on or a new method, where it is, from here, clear that most studies conducted in the field of creativity revealed how important it is to produce something distinct and tangible to others, and it is not necessarily new. It includes the production of old ideas in connection and new formulations that are distinguished by originality and modernity, and according to the essence of design, which takes the approach of creativity and innovation as a basis for achieving its aesthetic and functional goals- the meaning of beauty in it depends mainly on the latest technical developments, and includes a series of materials, tools and working methods, and through technological development the creative concepts have changed, and the time and moment of creativity has become impossible for the whole of sensual and visual interactions- especially, and principally the technical basis, as we find that design arts do not have their existence right except with the presence of these technologies altogether.

3) *Technical patterns of some design trends in the period of modernity and beyond*

Design trends in the period of modernity (Arts and Crafts Movement- Glasgow School- Art Nouveau- Artistic Secession Movement- Futurism - **Day Steele**- Bauhaus School- Stream Design- Organic Design- Scandinavian Style.

Design trends in the postmodernity period (psychedelic design- the original design group- the Memphis group- design currents in digital art: (pixels- vectors- digital collage- image merging).

Second: the practical framework

Patterns of techniques proposed to enrich the creative aspects of design surfaces (techniques related to the use of design elements- techniques related to the style of performance and method of implementation- techniques related to the exploitation of the potential of the material- techniques related to the type of tools used and technological development).

Results

1. Exposing the multiplicity and diversity of design techniques in the period of modernity and beyond, in order to open the vision for the designer on the horizon of experimentation through multiple technical options.
2. Cognitive awareness of the limits and capabilities of design technologies and keeping pace with their development increases the optimal use of technologies.
3. The use of technical and multiplicity of materials develops the intellectual and skill aspects of the designer and art students.
4. The combination of patterns of technologies for design trends in the period of modernity and beyond enriches the creative aspects of design surfaces.
5. Digital tools and techniques helped increase the designer's ability to obtain unconventional designs.

Recommendations

1. The necessity for the designer and art students to take advantage of the tremendous development in techniques to develop design thinking in order to produce new and innovative designs that are compatible with contemporary design and keep pace with the technology of the age.
2. Paying attention to the study of hand-made design techniques as well as developing the innovative use of digital technologies.
3. Continuous research on how to adapt plastic techniques and methods within the framework of a different and new design practice and treatment.
4. The researcher recommends getting acquainted with the various technical aspects of materials developed in the field of design that are compatible with contemporary art.

First: Arabic references:

Books:

- (2) Aljaminiu , sdam: 'iinfatih alnasi albasriu , maktabat almalik fahd alwataniat , alriyad , 2018.
- (3) Kamil , nhl: alsiyname takhluq tuqus al'alfiat alththalithat, manshurat wizarat althaqafat , suria , 2001.
- (4) Almjme allaghawiu , almujalid alkhamis , almutbaeat al'amiriat , 1973.
- (6) Tumas mwnrw: altatawur fi alfunun , aljuz' alththalith , tarjamat jawid , ebdalezzyz tawfiq wakharun , alhayyat aleamat lilkitab , 2014.
- (7) Eabdalkrym , ahmd: nazam tasmim alfunun albisriat , almunhal llnashr , 2017.
- (11) Jaefar , alhusayni alshyl: muejam mustalahat almantiq , diraan alaietisam litibaeat walnashr , mutbaeat albaqie , aleiraq , 2008.
- (12) Abu jumeat , nahi ebdalkrym: madkhal 'iilaa barnamaj sakamir liltafkir al'iibdaei , almunhil llnashr , 2015.
- (10) sayduhim , hina' slym: tatawur altijarat aljamaliat limafhum altaqniat fi mukhtarat min alqism alfaniyi , , dukturah , kuliyat altarbiat alfaniyat , jamieat hilwan , 2010.
- (26) . euthman , khalid hsn: muqadimatan fi altasmim bialhasib alalii , maktabat alnuwr , 2019.

Master theses:

- (8) eashur , muhamad 'iismaeil nafe: "faeliat barnamaj alnamudhaj fi aiktisab maharat altasmim althulathii al'abead ladaa tullab tiknulujia altaelim al'iislamia" , majstyr , kuliyat altarbiat , aljamieat al'iislamiat , ghazat , 2009.

PhD theses:

- (5) Alfadl , muhamad alrfaey: 'ijabiat wasalbiat aleadad alkabir min alsuwar fi aleadad alkabir min al'ashum fi alfatwrt , risalat dukturah ghyr manshurat , kuliyat alfunun aljamilat , dukturah , jamieat alsuwdan waltiknulujia , 2014.
- (10) sayduhim , hina' slym: tatawur altijarat aljamaliat limafhum altaqniat fi mukhtarat min alqism alfaniyi , dukturah , kuliyat altarbiat alfaniyat , jamieat hilwan , 2010.

Scientific journals and periodicals:

- (1) Yasin , 'iad khlf: tatawur altaqniat alsinaeiat , alsadaa , majalat iiliktruniat , 2017 , <http://elsada.net/46243> - 11/2/2021 -9:14 AM
- (9) salih , sami eabdalfatih wakharun: altaqniat aljamaliat watasmim shakal almuntaj , majalat altarbiat altarbiat waltaelim , 2017.

(13) Eibdiallah , 'i'ad husayn: nazariat aljamal fi altasmim , majalat diwan alearab, aleadad 2677 , majalat 'iiliktruniat , 2009 , <https://www.diwanalarab.com/%D9%86%D8%B8%D8%B1%D9%8A%D8%A9-%D8%A7%D9%84%D8%AC%D9%85%D8%A7%D9%84-%D9%81%D9%8A-%D9%81%D9%86-11/2/2021-9:06 AM>

(17) Eali , ebdalkrim silim: alharakat almustaqbalia (jdaliat alealaqat bayn alfin walsiltat), majalat alkalimat, aleadad 119, 2017 www.alkalimah.net/Articles/Read/8860 -11/2/2021 -8,00 AM. .

(19) Eyd , 'iilham sbhy: altadawul fi fin aljarafik wamukharajatih , majalat al'ustadh , aleadad 211 , almujaalid al'awal , 2014.

(28) Nabhan , 'iibrahim: aistatiqa almubtadhil bilughat tashkiliat jadidat mughlaqat fi alfin altashkili almueasir , jaridat alsabah aljadidat , 2015.

Second: Foreign references:

(14) Wendy Hitchmough: The Arts Craffs Lifestyle and Design, Watson, Guptill Publications, 2000.

(15) Stephan Tschudi Madsen: The Art Nouveau Style, Courier Corporation, 2013.

(16) Patrick Bade, Jane Rogoysha: Gustav Klimt, Parkston international press, 2012.

(21) Texier, Paris Panorama of Archicture, Parigramme, (2012). pg. 142

(24) Didero, Maria Christina :Italian Radical Design 1965-75 ,The monacelli press ,p.32.

(25) Brigitte Fitossi: Memphis, Thames and Hudson, 1998.

(27) Kilgard ,Mark: Vector Graphics & Path Rendering, 2012, University of Texas at Austin,p. 5-6.

(29) Hirsch, Robert: Light and Lens, Photography in the Digital Age-Focal Pres, 2007, p. 209.

(30) Stephen Edwin Coleman: Digital Photo manipulation, University of Southern Mississippi, School of Mass Communication and Journalism, 2007.

Third: Websites:

(18) <http://inkygoodness.com/features/marking-100th-anniversary-de-stijl-style/> -10/2/2021-7,48 pm .

(20) <https://www.alejandradeargos.com/index.php/es/completas/8-arte/228-josef-albers-medios-minimos-efecto-maximo-10/2/2021-8,18pm>

(23) <https://retroavanguardia.com/psychedelic-style-in-graphic-design/> -10/2/2020-8,42 pm