

---

## USE THE PARAMETRIC DESIGN TECHNIQUES AS A SOURCE OF CREATIVITY TO ACCESS DESIGN TREATMENTS FOR THE ARCHITECTURAL SPACES USING PRINTED TEXTILE HANGINGS

*Abeer Farouk IBRAHIM*<sup>1</sup>, *Raed Rushdie YAQIM*<sup>2,\*</sup>

<sup>1</sup> Department of Textile Printing, Dyeing and Preparation, Higher Institute of Applied Arts, Fifth Settlement, Egypt

<sup>2</sup> Department of Decoration, Higher Institute of Applied Arts, Fifth Settlement, Egypt

---

### **Abstract**

*Art is the soul of a civilized society, and it opens up new horizons for mankind of advancement and progress because it touches his feelings and sentiments and affects his actions and emotions, so society is affected by its decisions that create and build civilization, and the interest in the arts, especially the visual arts, constitutes an essential element in the formation of human culture. It is one of the basic concerns of many advanced civilizations and societies. The art movement is one of the main criteria by which the progress of a society can be measured, in addition to other criteria such as scientific and technical progress, and the marriage of the artistic and technical two directions to produce a work of art that carries the spirit of development is one of the goals that every applied designer seeks, that bears the responsibility of developing society and providing an applied artistic product that makes others happy with the artistic pleasure it carries and its use in the fields of life, or it achieves visual pleasure through its mixing with art and its treatment of a human environment that achieves for the recipient an enjoyable experience with that piece of art and a plastic treatment of that environment, In recent times, digital technology is rapidly growing, and the field of technology has become general and its uses carry the momentum that calls for constant presence and awareness by the designer to absorb it and keep pace with that, so the designer's awareness of the components of this era and its connection to it has become a definite and urgent necessity that he cannot ignore, and due to the ability of this technology to transform All information and data into a digital form that is easy to deal with in new and different forms from the above, especially Through some variables and coordinates that open us with an inexhaustible term and a very wide field of results, which is called the parametric design, which is concerned with studying the digital variables of the design unit and methods of their repetition and extracting designs that express the changing relationships between the coordinates and the coefficients of the decorative figure. Here, we easily notice the impact of digital technology on multiplying the information and assumptions produced, as well as the diversity of the means of its use, which provided the opportunity for a vast process of exchange and consensus to extract innovative design features that enrich the creative process and open the door to many design solutions.*

### **Keywords**

*The Parametric Design, Technique, Creativity, Architectural Spaces, Printed Textile Hangings.*

---

## **Introduction**

Art is the soul of a civilized society, and it opens up new horizons for mankind of advancement and progress because it touches his feelings and sentiments and influences his actions and emotions. It is one of the basic concerns of many advanced civilizations and societies.

The art movement is one of the main criteria by which the progress of a society can be measured, in addition to other criteria such as scientific and technical progress, and the marriage of artistic and technical directions to produce a work of art that carries the spirit of development is one of the goals that every applied designer seeks the responsibility of developing society and providing an applied artistic product that makes others happy with the artistic pleasure it carries and its use

---

\* Corresponding author: [info@aai.edu.eg](mailto:info@aai.edu.eg)

in the fields of life, or it achieves visual pleasure through its mixing with art and its treatment of a human environment that achieves for the recipient an enjoyable experience with that piece of art and a plastic treatment of that environment, In recent times, digital technology is rapidly growing, and the field of technology has become general and its uses bear the momentum that calls for constant presence and awareness by the designer to absorb and keep pace with it. Therefore, the designer's awareness of the components of this era and its connection to it has become a definite and urgent necessity that he cannot ignore, and due to the ability of all this technology to transform information And the data into a digital form, which is easy to deal with in new and different forms from the above Especially through some of the variables and coordinates that open us with an inexhaustible term and a very wide field of results, which is what was called the parametric design, which is concerned with studying the digital variables of the design unit and methods of its repetition and extracting designs that express the changing relationships between the coordinates and the coefficients of the decorative figure. Here, we easily notice the impact of digital technology on multiplying the information and assumptions produced, as well as the diversity of the means of its use, which provided the opportunity for a vast process of exchange and consensus to extract innovative design features that enrich the creative process and open the door to many design solutions.

If the architectural design is concerned with creating the vacuum in which all activities that represent different aspects of civilization.

The arts are one of the aspects that expand in the architectural void, which includes the arts of all kinds, as it has influenced various areas of life, especially the areas of design. Employing digital solutions in a printed and spatially suspended form after studying the targeted space, how to deal with it and beautify it, and how to reconcile a certain architectural space with the printed comments in it, in order to confirm the relationship between art as a digital product and between the architectural spaces.

### **Research problem**

- 1- The lack of treatment of architectural spaces to employ printed textiles linked to the wall and taking into account architectural trends Modernity.
- 2 - The constant need for methods and directions to enrich the artistic creativity process and its applications.

### **The goal of research**

- 1- Learn about parametric design as a source of creativity.

2- Emphasizing the complementarity relationship between the decoration and textile printing departments in producing printed textile pendants that take into account the design principles and determinants of the architectural space.

### **Research importance:**

- 1- The global trend towards exchanging experiences between disciplines to reach an applied product that is technically and technically mature and has new features that enrich applied art.
- 2- The necessity of using digital technology represented in parametric design for a distinct applied artistic product.

### **Research Methodology**

**1- Descriptive method:** through a review of some parametric experiments and the use of computer technology in their production.

**2-Experimental method:** through experimenting with parametric tools (which the two researchers seek to reach) in producing suspensions of printed fabric and their suitability to the internal spaces that have been chosen.

### **References**

- 1- Ibrahim Al-Maghazi: On the psychology of creativity (creativity of genius and the genius of creativity), The World of Books, 2014.
- 2- Braveen Goita: translated by Ahmed Al-Maghraby, Management Creativity in the Twenty-first Century, Dar Al-Fajr for Publishing and Distribution, Cairo, Egypt, 2009.
- 3- Hatem Abdel Moneim Al-Tawil, The Digital Revolution and its Impact on the Development of Architectural Education, Article in Magazine Architectural planning journal Vol. 16, April 2005.
- 4- Hassan N.M. "The School Environment in the Era of the Digital Revolution, published article, Al-Benna Magazine, Issue 164, Kingdom of Saudi Arabia
- 5- Saad Eddin Khalil: Development of Creative Capabilities, Modern Loyalty Press, 2008.
- 6- Abeer Hamed Ali Ahmed Sweidan, The Parametric Concept and its Applications in Interior Design and Furniture, published research
- 7 - Abeer Sami Yusuf Muhammad, Architecture after the Digital Revolution, a controversial vision towards a new dimension for the future of architectural design and building technology, a research published at the Third International Conference of the Arab Society for Computer Aided Design, Department of Architecture, Faculty of Engineering, Tanta University, 2012.

- 8 - Muhammad Muhammad Shawkat: Creativity and Inspiration: A theory of creative thinking - new insights - Arab Thought House, 1st Edition, 2015.
- 9- Najm Abboud Najm: Innovation Management, Crafts Concepts, Characteristics and Experiences, Wael Publishing House, i1 , 2009, Amman, Jordan.
- 10- Yousef Abu Al-Hajj, the Creative and Creative Personality, Dar Al-Kitab Al-Arabi House, 1st ed., 2018.
- 11- Roland Hudson, "Strategies for parametric design in architecture.", An application of practice led research., A thesis submitted for the degree of Doctor of Philosophy, University of Bath, Department of Architecture and Civil Engineering 2010. p 19
- 12- Dalia ABDEL MONEIM, Abeer Farouk Ahmed ALI, THE PLASTIC POTENTIAL OF CERAMICS AND METALS AS AN ENTRY POINT FOR THE DEVELOPMENT OF CONTEMPORARY JEWELLERY CRAFTS, International Journal of Design and Fashion Studies, Vol. 3, No. 1, 2020, pp. 10-13.
- 13- Ghalia EL-SHINAWY, Hassan SOLIMAN, Abdel Fattah ABU EL-ENEIN, THE POSSIBILITY OF ACHIEVING AESTHETIC AND FUNCTIONAL VALUES IN THE INTERIOR ARCHITECTURE OF WARM REGIONS USING MULTI-LAYERED CURTAINS, International Journal of Design and Fashion Studies, Vol. 3, No. 1, 2020, pp. 14-16.
- 14- Hanaa Kamel Hassan ALSEADY, THE RELEVANCE BETWEEN ART AND FASHION AND THE CREATION OF FASHION FANTASY DESIGNS INSPIRED BY GUSTAV KLIMT WORKS, International Journal of Design and Fashion Studies, Vol. 3, No. 1, 2020, pp. 17-40.
- 15-[www.azzaman.com](http://www.azzaman.com)
- 16-[www.abnaaelnaweia.Yooz.com](http://www.abnaaelnaweia.Yooz.com)
- 17-[www.pinterest.com](http://www.pinterest.com)
- 18-[www.wikipedia.com](http://www.wikipedia.com)
- 19- 16 <https://www.grasshopper3d.com>
- 20- <https://www.autodesk.com/products/3ds-max>
- 21- <https://www.autodesk.com/products/autocad>
- 22- <https://www.photoshop.com>

---

*Received: August 24, 2020*

*Accepted: October 22, 2020*