

Aesthetics of Kufic calligraphy in Islamic architecture as a source for digital design of metal jewelry

Assist. Prof. Dr. Karam Massad Ahmed Mohamed Farag

Assistant Professor of Metalwork Faculty of Art Education, Helwan University

drkaramart@gmail.com

Abstract:

Research problem: How can the aesthetics and characteristics of Kufic calligraphy be taken advantage, "Which are compatible with Islamic architectural solutions" as a source for digital design of metal jewelry? hypothesis :The aesthetics and characteristics of Kufic calligraphy compatible with Islamic architectural solutions is an important formative resource in the digital design of metal jewelry Objectives Benefiting from Kufic calligraphy aesthetics and characteristics "Which are compatible with Islamic architectural solutions in designing metal jewelry that combines tradition and modernity ,studying of some contemporary digital design methods for metal jewelry, Benefiting of technological development in the formation of contemporary metal jewelry limits: Analyzing selections of the Kufic calligraphy in the Islamic architecture of Al-Aqmar Mosque, conducting a self-experiment through digital CAD techniques using Matrex program, forming the prototype using CAM machine, casting prototype , Crafting metal jewelry using Manual techniques, Methodology: descriptive and analytical and experimental Methods, Importance: The development of creativity in the art education field by studying modern digital design and shaping methods, supporting metalworking curricula by reviewing Modern digital design and modeling methods, supporting the jewelry design field with some formulations traditional plastic with characterized artistic characteristics by originality and contemporary, results : the aesthetics and characteristics of Kufic calligraphy "which are compatible with Islamic architectural solutions" is an important formative source in the contemporary digital design of metalwork, finding creative solutions for metalwork designs by integrating Manual techniques with technological techniques, recommendation: activate the role of modern digital design to support metalworking curricula.

Keywords:

Kufic calligraphy Islamic architecture digital design metal jewelry

Introduction:-

Art education aims to develop thought, taste and artistic creativity, and to follow the developments of postmodernism. It also aims to revive the artistic heritage with its plastic and aesthetic values, while benefiting from technological development and employing its capabilities and using its systems, programs and modern tools in creativity, which allows the student to reach formulations Innovative plastic art with artistic characteristics characterized by originality and contemporary, where the heritage is dealt with "in an innovative concept, so it presents a new vision of the old, confirming and developing it. In this way, heritage plays an important role in teaching arts and the flourishing of the educational process, as it derives from its characteristics and components what benefits and develops the educational process, because this development lies in the roots of this heritage

And since the Islamic heritage is replete with enormous wealth of distinguished and unique arts and vocabulary, in particular the art of Arabic calligraphy, the artist used it in unlimited formative formulations of various types throughout the ages, as it was distinguished by uniqueness and strength among the arts of different civilizations. It enriched many other arts such as the art of architecture, as it was characterized by philosophical and intellectual dimensions. Architecture in Islamic art was decorated with writings of Arabic calligraphy, which were carved on the walls and engraved on doors, balconies, fillings ... and others. One of the most important types of Arabic calligraphy that was used extensively is The Kufic script is considered one of the first codified Arabic fonts, and it is the font in which the first Qur'ans were written, and the first font that developed from the Arabic fonts that preceded the era of Islam. Separate, form the background of writing, and its letters are distinguished by themselves with aesthetic values and various plastic elements. From geometric and organic lines that create other geometric relations in their connection", in an abstraction that helped to form letterforms that are characterized by creativity, and through an analytical study of the writings from the Fatimid kufic script used on the walls of Al-Aqmar Mosque. The letters were carved in a deep and prominent manner, and the researcher believes that they can be a different vision and a plastic source that he uses to formulate contemporary ornaments using three-dimensional digital design (CAD) Computer aided design, and the use of modern modeling systems, which represent a qualitative leap in the field of metalworking, where a new generation has emerged It is one of the smart systems based on digital design, which is one of these nascent technologies of development in computer science and its applications, which target digital simulation. By using these programs, we can design ornaments in a virtual reality while giving them the optical properties of metal. The design can also be colored with enamel colors, stones can be drawn in different shapes, and the measurements and dimensions of the workpiece can be set and defined, and analyzed for blocks or converted into flats as individuals for them. Three-dimensional programs also enable us to simulate the different shapes of metal surfaces and wires with their diameters. And its various sectors, pipes, diameter, metal wicker and other semi-finished metal shapes, as it allows viewing the work from all angles before starting the implementation process, in addition to digital formation methods, which is another breakthrough in the field of metalworking, where the design can be formed by means of advanced machines in what is called (CAM)Computer aided manufacturing, which are systems dedicated to technologically advanced machines for the implementation of computer design (from design to implementation directly), according to the standards and dimensions specified in the design, with the ability of the artist to combine these advanced technological methods and some methods of manual metal forming such as sawing, welding or Applying various textured effects, and assembling metal pieces using jointing methods to enrich the metal piece plastically and aesthetically.

Therefore, the researcher believes that the three-dimensional digital design of ornaments inspired by the letters of the Kufic script can be a different artistic vision that connects the distinctive artistic heritage with aspects of development in new metal plastic formulations that keep pace with the times.

Research problem:-

The digital design in the field of metal ornaments has developed greatly at the present time, until it has become a creative phenomenon that requires study and research in order to stand on the reasons for this progress and development and benefit from these technological capabilities in presenting a different and innovative vision of heritage, as the research dealt with the plastic capabilities of the Kufic line in Islamic architecture As a plastic source in the design of metal ornaments through digital design, while identifying the extent to which digital systems are capable of forming metal ornaments inspired by heritage. From this standpoint, the research problem can be identified in the following question:

How can the aesthetics and characteristics of Kufic script compatible with Islamic architectural solutions be used as a source for the digital design of metal ornaments?

Force search: -

- The aesthetics and characteristics of Kufic script compatible with Islamic architectural solutions is considered an important formative source in the digital design of contemporary metal ornaments.

research aims:-

1. Benefiting from the aesthetics and characteristics of the Kufic script, which are compatible with Islamic architectural solutions, in designing metal ornaments that combine originality and modernity.
2. Examine some methods of contemporary digital design of metal ornaments.
3. Benefiting from technological development in the formation of contemporary metal ornaments.

Research limits: - limited to:

1. Analysis of selected writings of Kufic script in the Islamic architecture of Al-Aqmar Mosque.
2. Conducting a self-experiment through digital CAD techniques using Matrix software.
3. Formation of the prototype using the CAM (Sism -high Adhesion SBP) machine.
4. Implementation of the prototype using the (lost wax casting) method.
5. Performing manual metal forming processes to craft a new piece of jewelry.

Research Methodology:-

The research follows the analytical descriptive approach and the experimental approach in a theoretical and practical framework.

research importance:-

1. Developing creativity in the field of art education by studying modern digital design and composition methods.
2. Supporting metalworking curricula by reviewing modern digital design and formation methods.
3. Supporting the field of jewelry design with some traditional fine formulations with artistic characteristics characterized by originality and contemporary.

Results :

- 1- The aesthetics and characteristics of the Kufic script, which are compatible with Islamic architectural solutions, are considered an important formative source in the digital design of contemporary metal ornaments.
- 2- The Arabic calligraphy has a strong presence in our Arab-Islamic civilization, with what it reflects of historical depth, and what it embodies of spiritual values and abstract and plastic dimensions.
- 3- Providing students of the College of Art Education with new design entrances to the subject of metalwork.
- 4- Finding creative solutions for the designs of metal ornaments by merging manual techniques with technological techniques, and benefiting from the artistic features of each, which enriches metal works and develops innovative thinking for students.
- 5- Digital molding is useful in implementing engineering designs and maintaining the accuracy of vertical and horizontal lines and angles, in view of the difficulty of using manual metal molding methods.
- 6- The researcher can make a number of the same resin model for the same design to cast it several times with the possibility of minimizing and enlarging and reversing the direction of the design, which saves effort, time and cost, which helped to perform multiple forming operations that enrich the metal artifact.
- 7- Teaching digital design and formation in jewelry in educational institutions qualifies the graduate for the labor market.

Recommendations:

- 1- Work on activating the role of modern digital design methods to support metalworking curricula.
- 2- Supporting the field of jewelry works with some new starting points with modern digital formation.
- 3- The necessity of benefiting from heritage by linking it with digital design, to open the door to innovation and departure from what is familiar, to deepen the creative and artistic ability of the student.
- 4 - Orientation towards divergent thinking and the practice of experimentation in different composition methods (manual and digital).
- 5- Contemporary digital design methods for metal ornaments should be supported by studying and following up on their latest publications.
- 6- Supporting field research that links educational curricula with the labor market.
- 7- Preparing some specialized technological laboratories to take advantage of the advanced programs for designing digital ornaments in the College of Art Education.

References:

- 1- 'iibrahim jumeata: 1947 "qisat alkitabab allearabiati" salisat 'aqra aleadad (53) t 1 , alqahirat - dar almaearifi.
- 2- 'ahmad hafiz hasan: 1988 - "'ashghal almaeadin wadawruha fi taeziz alaintima' alqawmi" muqadam 'iilaya mutamar altarbiat alfaniyat fi alaintima'i.

- 3- 'ahmad rida shishtar - tahqiq d / nizar 'ahmad rida "risalat alkhatai allearabii" dar alraayid allearabi- bayrut.
- 4- taghrid muhamad 'iibrahim: 2003 - "almutaghayirat alshakliat lilharf alkufii biaistikhdam alkumbuyutir kamadkhal liaistihdath tatawur mashghulat maediniatin" - risalat majistirghirmanshurat - kuliyyat altarbiat alfaniyat jamieat hulwan.
- 5- hatim eabd alhamid eabd alrahman khalil - 1987 - "alqim albaeidat lilkhatai alkufii wa'iimkaniyat tawzifiha fi almarfa'ayn altarbiat alfaniyata" - risalat ghayr manshurat --kaliaat altarbiat alfaniyat jamieat hulwan
- 6- suead mahir muhamad: 2017 "masajid misr wa'uwliahaha alsaalihuna" alhayyat aleamat liqusur althaqafat j 1
- 7-saed aldiyn 'iibrahim: 1985 "markaz almujtamae almahaliyi dirasat watahadiyat aleasra" dirasat alwahdat allearabiat - bayrut.
- 8- muhamad alsayid ghitas "'adwa' jadidat fi aljamie al'aqmar" - dirasat wabuhuth fi alathar walhadarat al'iislatmiat - alkitab al'awal "aleimarati" majalat kuliyyat al'adab bisuhaj - jamieat janub alwadi.
- 9- mustafi muhamad rashad 'iibrahim: 1980 "dur alkhatai allearabii kaeunsur min eanasir tasmim almulsaqati" risalat majistir ghayr manshurat kuliyyat altarbiat alfaniyat - jamieat hulwan.
- 10- naji zayn aldiyn aljahizi: 1974 - "musawir alkhatai allearabi" baghdad - maktabat alnahdati.
- 11- eafif albahinsi: 1984 - "alkhatai allearabii 'usuluh , nahdath , antisharuhu" - dar alfikr - dimashqa.
- 12- ean / shakir eabd alhamidi: 2005 "easr alsuwrtati" - ealam almaerifati.
- 13- yusif bin tughri bardy jamal aldiyn 'abu almuhasin: 1972 "alnujum alzaahirat faa muluk misr walqahirati" - dar alkutub walwathayiq alqawmiat - j 5.