

TECHNOLOGICAL SYSTEM AND METHODOLOGIES FOR TRANSPARENCY AND OPACITY, INDIRECT OF GLASSES SCULPTURE AND HOW TO BENEFIT FROM IN TEACHING THREE DIMENSION EXPRESSIONS

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Abstract

No doubt that the integration between science and technology has influenced to a great extent, the acceleration of progress simply because issue became no longer dependent upon the skill of artisan or his effective tanning upon any a specific technique but the main accreditation turned to a confirmed scientific theory, that allows the individual to harness the nature's forces for his welfare ... and it is the major benefit as a result of integration between science and technology .

Integration between science and technology has been increased to a robust bond, the muleteer that it has led to the emergence of a newer kind of researches ... the applied researches, which has made during the late decades huge, and influential .

the discovery of any new methodology by the artist is no more result of a technological progress and this could start by utilizing new materials for another field differing than that it has been originally intended .the artist with his deep insight and futuristic trends, can invest these materials, and perhaps the found tools, in plastic art domain.

One of most exciting materials for the artist, who is concerned with modeling, is glasses .it is a mysterious medium .. assist displays the metaphysical aspect of the sculptural art work ... !!.

Glass includes what is seen and what is un seen at the same time, as far as it alternates between transparency, opacity and the change of his colors . this is in addition to his uniqueness of plastic features, which is being latent in his color data and transparency . also one can observe the unique qualities of glass . the richness and diversity of its modeling methods, is diverse physical properties, which being it closer to metals, for melting, casting in metallic and thermal molds .. and another properties that bring it closer to viscose liquid ... another quality that enables it's direct modeling at hot states, also it can be directly modeled on cold glass, through assembly, cutting, lazier in graphing, acids, and abrasive materials, using parallel technologies of hard stones. hence we see that this material is a rich medium in experimentation and progress for the art of sculpture, also for developing a new methods and techniques, which possess intellectual and artistic values ... these late methods allow the artist possibility of creating colossal works that could be appropriate to that sort of associative sculpture architecture, in addition to outdoor displays through comprehensive study for technological and beautiful aspects of glass sculpture, it would be clear for us new expressive features (qualities) using different visual attributes . from the technological point of view, glasses produced with various techniques, particularly direct modeling techniques, are materials of unique characteristics for sculpture and this is for what it possesses as physical and mechanical properties .

Research problem: the research problem is associated with extent of abilities for a adapting and utilizing the cold working technologies (direct modeling), and it's importance in handling this material in the field of sculptural and artistic creations.

Research objective: benefit from modeling and expressive abilities, that characterize the glass material as a source of enriching three dimensional modeling at the faculty.

Keywords: viscose liquid, metaphysical aspect of the sculptural art wok the cold working technologies (direct modeling)

INTRODUCTION

Glass is one of the oldest materials known, because the ore arose from nature but human enter items, glass became complex as material produced by melting sand with alkaline or lead compounds or brackish for assistance and percentages of alumina. Glass divided in terms of the optical properties of the glass transparent and translucent and opaque.

The integration between science and its theories, and application technology is becoming more increasing reliably and Powderly which is emerging a new kind of scientific research which is "applied research" which is developed quickly in the present times.

In the 19th century with the advent of mechanization and the development of production methods associated with the industrial revolution, the manufacturer of glass products began to make a tremendous progress and became one of the most important and most commonly used in all areas of life⁽¹⁾.

Silica, as a major component glass, could be found in three crystalized forms which are Quartz glass, Tridymite glass, and Cristobalite glass. And in configuration or no crystalized shape Tektites glass, Obsidian glass, which is black volcanic glass, Pumice glass, which is light filling volcanic glass used in refinement known as the "Alnsfah or Pumice", and Lechatelierite glass, resulting fused silica in very high temperatures and believed that the glass Tektites without tiski⁽²⁾, because it has been heated by air traffic, and is a cut glass small model minus the PEAR or lenticular are isolated or underground in many places in the world, and its composition is similar to configuring Obsidian but it contains a higher percentage of iron and manganese⁽³⁾.

One of the most important contemporary works of sculpture features is the ability to imagine and use new methods aimed at diversification of technical formation processors and this comes only through research and experimentation without the specific traditions of form or technical nature of the material, it is not limited to three dimensions, features an element of motion and rhythm, and this property is found clearly in nature, so called in contemporary art in the fourth dimension⁽⁴⁾. Based on the foregoing, the current research examines ways to one of the doors of artistic aesthetic surround composition, through the possibility of processing glass slide for the production of plastic and expressive forms of sculptures new aesthetic values and different expressive parts that formed them.

Research Issue

- How can I benefit from a study of the aesthetic of glass in employment forming a solid as a source of enrichment of teaching in technical colleges?
- How can I benefit from raw glass as a raw argument for creating an aesthetic vision of transparency and cataracts are sculptured in the shape of the glass and the integrity of the relationship between form and emptiness?

Research Hypothesis

- To study the aesthetic of raw glass employment develops the ability to deepen students ' aesthetic vision towards the contemporary art sculpture.
- The recruitment of glass box in aesthetic contemporary sculpture achieves enriching aesthetic values work sculptured.

Research Objective

- Find some port lets developed for the teaching of sculpture by glass cutter for technical college students.
- Disclosure of employment impact of raw glass aesthetic in contemporary works of sculpture and find insights and aesthetic plastic and new art.

Research Importance

- Take advantage of the scientific theories of natural phenomena in the field of public art sculpture in particular.
- Enrich teaching sculpture at technical colleges with a new portal in the field of sculpture with glass cutter investigates the evolution of the educational process.

Research Limitations

- Historical study of glass as a raw material has its roots stretching through history in the Mediterranean basin
- The Research is limited to a sample from second year students (Department of Art Education -Faculty of Specific Education-Alex. Univ.).
- The Research is limited to the field of sculpture.

Terminology

1-Patterns:

Joseph Giotto, "the formal relations principle or rule in design for any combination of lines, colors and shapes so that they employ to express really imaginary thinking, usually achieved through repetition of shapes, lines and colors⁽⁵⁾ and it also means a holistic design achieved through repeated single or more⁽⁶⁾.

2-light :

It is a form of energy, and more accurate, light is electromagnetic energy is a type of radioactive energy that contain rays and radio waves. Etc⁽⁷⁾.

3. Glass:

There was glass in nature is in the form of stone blocks called aubisdan obsidian Where transparent and semitransparent, often colored with different eruptions colors due to soil factors affecting them during volcanic eruptions⁽⁸⁾.

4. Transparency:

One of the new factors in obtaining spatial depth through multiple transparent surfaces which actually creates a vacuum between the parts and check some of the powerful light of transparencies and see what is left of the details due to the slide of purity⁽⁹⁾.

5-Opacity:

"The term color called almtavih because there are some colors that cause the opacity and mask the transparency colors⁽¹⁰⁾.

Research Methodology

Research follows the approach of positive analytical in terms of the theoretical framework which addresses the contemporary works of sculpture that describes the extent to which the sculptor achieve aesthetic values through recruitment of raw glass aesthetic creations sculpture through:

- Study of the factors and variables in contemporary sculpture.
- The study of the sensory characteristics of glass and synthetic fabrics and techniques.
- It also follows the experimental method in which the practical, which includes:

Unit title: Systems and methods for transparency and cataracts in the art of direct glass sculpture composition and use in teaching the expression round.

The field unit: Formation (sculpture).

Philosophical foundations of unity: Effect of interaction of raw glass surround composition to create a work of contemporary abstract sculptures.

Unit objectives:

- 1- Give the trainee technical concepts and technical skills related to the formation of contemporary sculpture.
- 2- The impact of technological development on surround modulation techniques.

Sample module: Group (170 students) second division– Faculty of specific education, University of Alexandria.

Time unit: 36 hours.

Steps of unity: The unit is taught in 9 interviews 4 hours for the interview.

Materials and tools: Transparent glass palette space of 50 cm x 50 cm. transparent glass 3 ml and 5 ml and 6 ml and 1 cm – almas manual glass cutting – glass cutting man – my rinse glass-stone smoothing and refined glass-epoxy transparent

Techniques and methods of teaching: Mass teaching by using the boot method and view the demonstration and open debate.

Evaluation: Progress evaluation after each interview.

Final calendar after the end of the module.

Content module:



1- Boot phase:

First lecture: Historical impact and influenced by abstract art

The objectives of the interview:

- Introduce students to the components of abstract art.
- Disclose technical features of the art holographic composition 2D surround

The conduct of the interview:

Students are asked about the components of abstract art and what types of glass and the physical and chemical properties, heat it and is it possible that the glass slides re-employed in works of sculpture and then starts trainee illustrate some entries, for example:

-Abstract direction: It cares Sculptor structural aspect of the shape at the abstract organizational relationships where the sensory attributes staff and synthetic material in the expressive content confirmation, by suggesting its shape and its impact on the Viewer, without resorting to the topic.

-The nature of glass The Nature of Glass (Solid-Liquid- Gaseous)

- **Glass processing steps**⁽¹¹⁾ (Refractory materials for the glass industry -Set-up phase- Traditional methods-Modern mechanical methods- Quality and endurance stage- the final stage of finishing, so as to remove all impurities, which clean and Polish the surface).

- Types of glass⁽¹²⁾:

1-. **Basic Glasses types** (Floating glass -- Enamelled glass -Tinted Glass -(Low-emission) Glass -Antique Mirrors -Woman Mirror-Patterned Glass).

2- **Decorative Glass**(decorative colored glass-Alaupal glass-Acid-Etched Glass -Glass Plate-Decorative Etched and Sand Blasted Glass).

-Glass Properties (Mechanical-electrical- chemical- natural - physical).

- Optical properties⁽¹³⁾

-Refraction: The phenomenon of refraction of light when passing through glass why possibility lenses, when the passage of light into the lens the lens break all rays passing through glass and assembled at one point and measured the amount of refraction by refractive index Refractive index It is the ratio of the speed of light in a vacuum to the speed of the glass and the higher refractive index, the higher the refraction of light.

-Dispersion: When passing light beam between Ogg travels which speeds happen to him change direction unless offset by a barrier, but the colors are light refraction occurs not in the same manner, there is a difference between them, and this difference leads to some fragmentation of light to prevent all rays which pass through the lens to focus on the same point, measure the difference in refractive index called coefficient of dispersion.

- Transparency: Transparency is the most important optical properties of glass to glass box where the availability of light and vision, and the ability to see behind glass and body is the overlap between the glass and the format of the values of the properties of surfaces that follow" and why the glass does not absorb visible light it appears transparent and colorless is that it does not contain any impurities or obstacles preventing the passage of light. Not all colorless transparent glass. There was a stained glass in forms "If sucked glass part of light when a certain color the glass seems to be colored. If it does not absorb any color of the spectrum it seems colorless transparent.

- Reflection: The phenomenon of reflection of light appear on the polished shiny smooth surfaces where the change of format if made from sturdy feature that property, when it changed its light density, size and shape and give a sense of lightness and weight in a vacuum, and suggest a multiplicity of surfaces and multiplicity levels arising from the optical wave refraction fallen upon.

- Sensory characteristics:

-Color: the advantages of glass that gives the impression with color blending, makes it spread and multiple grades due to the intensity of color as well as lighting material affecting transparency and raw nature of work and color a khromaghanatiset radiation known oscillations have a range.

-Texture: Transparent glass works on the clarity of his internal texture which enriches the artwork "internal texture gives a sense of plurality and varying degrees of surface appearance of the shape without affecting the texture of his reflection.



Almut Flentje, Molten glass, mixed media and impurities
H 15,7 17,3 WD 0,8 (inch), H with stand: 75.6 (inches)



Racine Art Museum, 1983 • Glass •Harvey K. Littleton



Mario Ceroli Giant ocean waves, wood and glass.2011

2- Design phase:

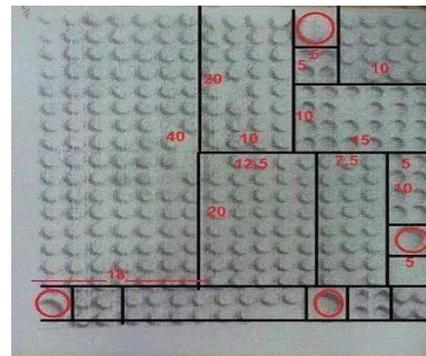
The second and third interview : Vocabulary and abstract elements and role of plastic and aesthetic values:

The objectives of the interviews:

- Introduce students to the decorative engineering units, organic, plant, animal, and some icons in the environment and how the abstract formulation.
- Focus on the importance of proportionality and laws of superposition and juxtaposition and balanced distribution of engineering units.
- Emphasis on diversity in the choice of thickness and geometric shapes and the role of texture.

Conduct the interviews:

- Introduces students to some of the icons and decorative elements and modules which has the meaning of optical
- The importance of understanding the relationships between shapes in the distribution units abstract decorative design fundamentals to prepare the design of the sculptural wall.
- The distribution of thicknesses and numbered pieces and dismantle each piece separately and glued to the glass
- Solutions to the problems faced by students during the design fee.



3-Experimentation phase

The fourth interview : Holographic composition and methods for collection of glass slides.

The objectives of the interview:

- Recognize the different types of glass used in the molding process.
- Enumerates methods of glass cutting tools used.
- Try out some plastic methods before starting on the actual implementation of the artwork to discover the best performance in the mural Contemporary sculpture.

The conduct of the interview:

- By identifying ways of hacking and how the appropriate Assembly of glass slides.
- Exercise on how to paste the piece of glass and good and harmonious composition.



4- Implementation phase

From the fifth to the ninth interview interview : Wall sculptures contemporary glass production 2d dimensions:

The objectives of the interviews:

- It is estimated the value of the output of fully sculptured wall.
- Feel the importance of abstract art and its role in the creative process.
- Takes care of the work of contemporary sculpture and feels like Continued experimentation.

Conduct the interviews:

- The records of the students and explain the part relating to how shredder and deal with adhesive.
- Performs engineering design students (circle and square) with elements of abstraction in a space of 50 cm x 50 cm for each student.
- Collective design is split on students and is numbered.
- Overall design area 5 x 9 meters high.
- Students begin with glass cutting and smoothing your flushing.
- Shared his records to see what has been done and the exchange of experiences and views.
- Discuss business at the end of the last lecture is the mural fragments of sculpture.

Calendar module:

1. Discuss pedagogical dimensions to use sturdy glass.
2. prepare a generation of students of the art can handle glass cutter with modern technical concept.
3. open new horizons for experimentation which helps to develop student's creative thinking.





Search results

1. possible action levels different on the surface, giving a richer substantive work in the field of composition in glass field.
2. allow the multiplicity and diversity of ways of forming glass cutter fine possibilities for enriching artwork.
3. practice fine ore glass it requires full recognition of steps each way and the processing location.
- 4-Transparency in works of sculpture by enriching the imagination and check in contemporary art.

Recommendations

- 1- Researcher recommends attention and research on methods of shaping glass.
- 2- Establishment of plants and workshops specialized for glass formation in technical colleges.
- 3- Need glass companies interest in research in this area and adopt and employ them to improve the quality of its products and the emergence of distinct products which reflected on the industry in General and technical industries, in particular in the form of enrich this area.

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