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Using the Digital Techniques as an Enrichment Media to the Formational Unit in the Artistic Design for the Walling

Namer Kasim Khalaf Al-Bayati and
Najim Abdullah Askar Al-Bayati

Abstract--- *The research problem was defined in the role of using digital techniques as an enriching media for the formational unit in the artistic design of the walls in controlling the design and producing the formational unit. This is done through a walling study, College of Fine Arts, Diyala University which in its design it used several Computer Digital Programs and extracting them and executing parts of it through Digital Numerical Control (CNC). Then identifying the points of view of a sample from Diyala Governorate artists, Iraq and the specialists in the scope of drawing, sculpture, design and digital art. The most dominant results were achieving the formational unit in the artistic design of walls through the use of digital techniques as its enriching media.*

Keywords--- *Digital Techniques, Design, Enrichment Media, Walling.*

I. INTRODUCTION

The research problem concentrated on using digital techniques as an enriching media for the artistic design of walling in the production of the forms. The (Digital Art) is the art which uses the computer as a formational tool using the imagination, experimentation to do the designing process which aims at planning a certain form and establishing it in an effective method for the production of the walls artistic works. These walls works have the elements and features of the structure of the formational artistic unit which can be executed according to the research problem and through the available digital techniques whose role is as an enriching media for the production of the artistic designs for the walls. If these elements achieve in the formational unit as a whole including what is included in terms of traditional walls in the execution operations which can be achieved through the aesthetical artistic formulation for its whole formation. But if the enriching techniques were not used in its correct form, then it will result in a reverse consequence to the aesthetical concept of the formational unit for the walls. Here, the research problem through directing the following questionnaire: **What is the scope of achieving the formational unit in the artistic design of the walls when using the digital techniques as an enriching media in its design and execution.**

The Importance & Need for Research

- The importance of the research is in the service it provides to satisfy the needs of the workers in the scope of the walls arts which results in achieving the formational unit in the artistic design of the walls because the use of the digital techniques results in the following:

Namer Kasim Khalaf Al-Bayati, College of Fine Arts, University of Diyala – Iraq.
Najim Abdullah Askar Al-Bayati, College of Fine Arts, University of Diyala – Iraq.

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- Defines to the painter artist and the designer concerned with the walls arts on knowing Al-Mdiyat in the digital techniques used in the walls arts; and in the ease of utilizing the formulas and the designing symbols in the light of using the digital art techniques which enriches the creation and experimentation operations in the light of modern standards and techniques.
- Supporting the interaction between the designer artist and the enriching role for the digital techniques used in building and executing the walls.
- This research provides a service which enriches the experience of the artists and the arts students in the scope of the walls arts through its digital presentations.

The Research Objectives

This Research aims at defining the following:

- Using the digital techniques as an enriching media for the formational unit in the artistic design of walls in terms of construction and the shape formation and according to the axes of the formational unit.
- The various trends and methods on how to build and create the designing formulations according to the digital techniques and the means of the digital control in the production and execution.
- The axes of the formational unit which is included within the concept of the digital enriching concept for the walls arts.

The Research Limitations

This research is limited to the following:

- Walls of the Fine Arts College – Diyala University which was executed in the Academic Year (2014-2015) as a Façade to Artistic Education Department in the College for the purposes of the Analysis and knowing the opinions.
- Diyala Governorate Artists in Iraq i.e. those specialized in the Plastics Arts (Drawing, Sculpture, Design, Digital Art) including (20) male and female artists.

The Background Theory

The scientific and technological revolution was a very important variable and the first challenges of the twenty twenty-first. The knowledge revolution means that the science and knowledge became an important production factor and the technological revolution mainly depends on the human mentality and his potentials in using the computers, local and international electronic communication networks and developing it. This is in addition to the science of organizing, storing, retrieving and re-organizing the information to achieve its greatest benefit. Commonly, the computer is not just an executive tool but an astonishing mean which necessitates technology and methodology in the production such as the production, generation and creation of the digital artworks through the dialogue language between the artist and the computer programs which produce it.

The Traditional schedules for the Artistic Creativity, we notice the existence of a large number of the mechanical means which can be used for the production of optical artistic works but it may obstruct the freedom of creativity. This is in contrast to the computer which is transformed to spacious tool in treating and programming the mental

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picture for his primary thought and producing it in an optical form which is careful in not reducing the intellectual and artistic effectiveness and transferring it to a dry instrumental thought. That is, it is a tool to accelerate and liberate the creative artistic thoughts far away from the patterned and methodology (Khalaf & Getan, 2016, Page: 63-64).

Therefore, we find that the Digital Art is an art which uses the computer as a formational tool using the imagination, creative and experimental to do the designing process to plan a certain shape and formed it in an effective way for the production of a wall artistic portrait.

Therefore, the history of the Digital Art shows the scope of an interface between the technology and the art. Perhaps it is natural in the art which moves towards making the electronic tools as creative for art hasn't been seen before by the humans' eyes.

The use of the computer as a contemporary technique showed an effective influence in the scopes of the contemporary plastic arts through adapting its potentials and various programs to achieve artistic formulations in a contemporary form which conforms to the culture and the contemporary trends. This resulted in the appearance of what is known (Digital Art) which is one of the trends of the Plastic Arts which is considered as qualitative addition in the process of Artistic Creativity. (Al-Jaryan, 2013, Page: 4).

Our current research is an attempt to find a contemporary artistic dialogue between the Digital Art as an enriching media for the Plastic Art in one of its trends and it is the formational unit in which the digital art can be an enriched media for the plastic artistic with its designing formula or what is called (The Art of Walls).

The Form in the Digital Art

The digital evolution and the Globalization led to what is known as (Digital Forms) which became wide widespread fields. It is possible to clarify enlisting the thought and philosophy of the digital forms within the concept of the modern formational theories which respond to the needs of this era which contains directions and renewable theories. (Al-Taweil, 2005, Pages: 68-69).

The Digital Forms can be considered as those forms whose design depends on using the digital language and the computer as the basis for the design. This is followed by the spread of these forms in various engineering and artistic aspects and therefore it came to express the experiments and renewable theories for the sculpture, architecture and industrial forms. This represents new direction on the international level which becomes clear through the following points:

The continuous development of the computer programs.

- Appearance of a new developing system of the Information Network.
- The contribution of the advanced technology in creating new techniques system and new industry.
- The Culture of the digitals and acceptance by the users, their responses and coping with them results in the spread of this method on all the artistic levels.
- The rise of a new generation of the artists who interact and match this new intellect.

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Therefore, we conclude according to what is seen by (Taman, 2004, Page: 2), that the consequence of the technological contributions in the scope of creativity, appeared the re-presentation of the artist vision in a contemporary form. These contributions submitted new and distinct aesthetical experiments where these creativities are only implemented using computers or technological media. These tools became a source for saturating the artistic creativity desire where the artist was able to invest the instrument potentials where this led to the development of the shape of the creativity. The artistic work (Mural Portrait) as a form and in a compound shape which enters in its formulation a group of (elements & units) which are formulated according to the vision of the artist-designer of the formational and according to the processors and the formational techniques done by the artist using the digital arts backed up with imaginations and supported by the creative technology which can formulate and construct more easily and its various techniques to form the formational operations in terms of (Analysis, dismantling, re-structuring, abstraction, destruction, exaggeration and flattening. The learner has several designing formulations for its elements to add an expression to his works and therefore it diversifies the method of treatment for each artist to its elements as an attempt to reach the suitable formulations so that formational methods are formed which are characterized by enrichment and diversity. (Eid, 2012, Page: 1540).

Features of the Digital Designed Form in the Mural Design

The (Mural Design) is that type of the works (Formations) i.e. the artists drawn with the various colors and raw materials which penetrates and are directly connected with the walls of the building. These designs either visualize individuals or plants or animals or experimental lines shapes through a certain historical or philosophical or religious subject. Also, the relationship of the Mural Design with the architecture is definite and existent and is considered as part of the organizational and esthetical architectural components.

The Artists invested in all aspects of the technology and employed it in the artistic mural designs across the various art history. Since the nature of the art and its connection to the contemporary culture, then it became clear in the after modernization arts which matched with the technological development in the multi-media in terms of raw materials and various tools. The Mural designs entered in many artistic trends in after modernization arts such as the (Interactive Art). An example of this is what we see clearly in the Mural Digital (Flow of Traffic) for the artist (Macros Lerner) in Munich, Germany (2007) in which the digital techniques were used for the production of a mural lighting. (Al-Garyan, 2013, Page: 25). Figure (1) List of Appendixes.

The designing idea in the digital environment often develops from the thoughts provided by the dynamic scientific means. Also, it is possible to discover the relationship between the tactical manipulation through the computer (which made easy by using the new programs) and between the developments of the digital form in the mural art. This is in addition to the availability of the potential to select the materials and components specific to the digital form.

The designing terms for the walls portraits are selected based on its relationships with the contents and implications of the location. Also, the methods of processing for these terms differ between the experimental, expressional and symbolic as they are terms which enter in the formation of the design and not a target as a unit by itself. (Fawzy, 2011, Page: 176).

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(Bayar Domain) say on this matter "In the arts, the giving and interaction with the time, location and words is very possible because the computer can merge the elements and approximates the constructions". (Khalaf & Ketan, 2016, Pages: 63-64).

The designing elements and what links them in terms of relations in the artistic work, in case of un-separable merging and case of it is collected together, the meeting to the plastic work can't when receiving the artistic work, considers what is received as designing elements by itself otherwise the work terminates and loss of its aesthetical value. (Abd Al-Amir, 2007, Page: 231).

The formational basis is considered as the basis for building the design and that it determines the relationships which link between the picture elements or the design terms and its scope of influence with the elements surrounding it with the design unit and it's linking. (Shawzy, 2006, Page: 139). Despite this, the two researchers conclude that those formational elements contain un-limited patterns of the linking systems between each other and through a group of the organizational methods used by the designer to the rules of the formational relations on the design bed such as the form and changing the area or space and variation of the touch. There are many of the elements of the formational unit which can be classified within the formational features for the designing works. Among these aspects is what was submitted in the study by: (Ali Ramadan, 2001, Page: 116).

It was stated the various aspects for the form such as the form, direction, size, material, touch, light, colour and the features of the formational unit which included the equilibrium, dominance, harmony and vitality that is what can be considered among the principles of the design in the aspects related to the artistic form.

But our current study and according to its targets which are limited in the elements and principles which are covered by the artistic digital design of the processors whose their axial role is the computer and the processing tools for the forms with which they are produced and which were covered according to the Questionnaire Form prepared by the two researchers.

Design & Production of the Artistic Mural through the Digital Techniques

The process of the digital design technology made it easy for the process of representing the design and the artistic mural drawing which was done before the existence of all the manual methods. But the great influence of this technology was on the design process itself where nowadays most contemporary artists use digital programs to develop the ideas and just for drawing it or expressing it.

There are many computer programs used by the artist and designer either at the level of the photography or the artistic and architectural drawing, for example, using the programs of (Adobe InDesign, Photoshop, Corel Draw, Ucancam and other tens of programs. programs can coordinate between several different types of information to which the programs are supplied to form streamlined and homogenous forms without defining a certain function for it. This made it possible to create organic and dynamic forms in an organized method which in turn helped in transferring these thoughts from the designer's imagination to the space of reality. This matter results in the generation of the forms in term of information which are fed with programs and then transferring them to equations

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which are transformed to the digital computer language to be executed according to what is required from it. (Douglas, 1995, Page: 382).

The technology also eased the production of the designing and artistic portrait using the mechanical tools through linking the computer with these machines of what is known as the (Digital Control) which is meant as a series of documented instructions in the form of numbers and alphabetical letters and symbols which are coped with the control unit in the machine and their transformation to electrical pulses which direct the electrical motors and the cutting tools with the machine; and then executing the required mechanical operations where these numbers, letters and symbols which represent the passworded instructions point at limited distances, situations, functions and motives which can the cut tools cope with and executed it on the piece which we want to formulate.

The Digital control system was introduced using the Computer Numeric Control very successfully in various artistic manufacturing operations such as making holes and cut where the digital control techniques were used using the computer in a wide scope of operations and designing the robots and many other operations. In General, among the reasons of the need to the digital control machines by the high level of sophistication of the forms and the design.

In our current study, the mural implemented in the Fine Arts College, Diyala University relied on is some part of designing its forms on the computer's programs such as (Photoshop, Corel Draw, Ucancam) and a large part from implementing some of its forms on the Digital Control Machine (CNC) which will be introduced through the practical study.

The Previous Studies

There is a scarcity in the Arabic studies which covered the Digital Art in the field of the artistic design for the mural. The two researchers investigated the sources, literature and internet sites, but they did find in the study in the scope of the arts or the mural design any similarity to the current study in terms of the research problem, targets and the methodology but there are several studies which searched in the digital art where it was utilized in enriching the theoretical aspect for the research. Among these studies is a study by Amjad Abd Al-Salam Eid titled "The Digital Art as a technical media for enriching the formational design and its influence on developing and modernization of the education programs in the high institutes in Egypt and the Arab World" Year: 2012. And the study by Mohamed Mahmoud Hassan Matouk titled "The Artistic Creativity in the Digital Media Environment as a wave to develop the architectural education and training in the future", the Year 2003.

II. RESEARCH PROCEDURES

1) **Research Methodology:** The research used the Descriptive Analytical Methodology which conforms to the study targets and which guarantees the accuracy and subjectivity.
2) **Research Sample**: To perform the current research, the sample was used which represents the mural in Fine Arts College, Diyala University (Artistic Education Department Façade) as a sample for the Analytical Study (Field Study). The two researchers also used a sample from male and female artists in Diyala Governorate where their number was (20) in specialties (design, drawing, graphics, sculpture, digital art) to

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know their opinions concerning the aspects of the formational unit in performing the moral of Fine Arts College, Diyala and through the questionnaire form prepared by the two researchers.

3) Description of Research Samples:

A: General Description: The Moral of the Fine Arts College, Diyala University: This Artistic Moral was produced for the Academic Year (2014–2015) by professors and students in the Artistic Education Department. The idea was prepared by Asst. Prof. Asst. Prof. Najim Abdullah Askar; and that the electronic programming and the digital support was prepared by: Asst. Prof. Namer Kasim Khalaf Al-Bayati (Ph.D.). As for the execution cadre, it was participated by a number of teachers and students where the mural included a number of specifications sum of them are presented in Table (1).

Table 1: Mural Descriptions in Fine Arts College – Diyala University

Total Measurements	Height = 6.2m.	Width = 9.60m.
Used Raw Materials	Wooden Bloc 12mm.	Metallic Framework
Used Tools	Aqueous Al-Penlight Colors, Acrylic, Oil Olive Colors.	
Computer Programs	Ucancam, Corel Draw, Photoshop.	
Machines & Equipment's.	CNC machine, Manual Saws, Irked Saw, Carpentry Tools.	

B: The Designed Thought and Production of the Forms

The target of the idea is to collect all the students and teachers of the arts education department in one design artist art as for the large façade of the department, it was difficult to cover the mural directly with a mural drawing especially that the students aren't those who specialized in the Plastic Arts. Therefore, the idea moved towards the principle of the shape formation which includes the elements and basis of the design. The shape includes changes with the ratios for the Circular Shapes which starts with a measure of (1) meter from the top and a reduction in the volume at (10) c. decrease for each circle towards the bottom and on both sides of the façade to become of 30cm. measure downwards. This process required digital processing using the (Ucancam) so that the measures become accurate and then executed using CNC Machine which works according to the principle of the digital control by using the computer. As for the mural background, the idea was to rely on the main and secondary colors in addition to the neutral colors and according to the concept of the graduation in the lighting value from the top to the bottom.

The engineering shapes (Circular) which is the axis of the work, various artistic portraits from the work of a group of the department's students which expresses various thoughts and to several artistic trends. As for the mural media, the idea was the collection of the faces of the department's professors and ordering them from top to the bottom according to the graduation of the scientific title and by using the same raw materials. This necessitated a digital artistic processing of another type where a side portrait was photographed for the professors and then processing the photographs by using the Corel Draw or Photoshop programs to transform the shape digitally to be read by the shapes processing program (Ucancam) which corresponds to the work with the digital control program for (CNC) Machine which is specific to digging the shapes and producing them industrially according to the concept of the digital control concept for the shapes i.e. Figure (2) List of Appendixes.

C) The Formational Unity for the Mural

Achieving the unit in the artistic work for the mural of the college of fine arts, Diyala University, was among the

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main requirements where the unit is considered among the important principles on which any design is based including the design of this mural. Here, the unit means unifying all the units and their cohesion with the total system for the design i.e. what represents the relationship between the part with the part and the relationship between the party with everything. This is an integrated collection of the functional, aesthetical and expressional parties in which is accommodated the basis and other relations.

Acquiring the artistic work represented by mural for its aesthetical value, was not possible without the unit which links between the elements with each other. Therefore, the unit is a collection of the optical elements through a certain rule or several rules to form the feeling of the unit in which is relied on the unity of the elements and the unity of the designing principles. Through utilizing the digital techniques in the design and execution, the mural was established according to the measures and specification stated above. But this artistic work had to get its information through questionnaire forms taking opinions from receivers of this type of the artistic work to achieve the formational unity, especially where it was utilized from the digital techniques in enriching the execution of this unity. At this stage, the study required from the two researchers preparing a tool for searching to know the scope of achievement of the formational unit in this mural in the aspects which were utilized in the digital techniques. Look at Figure (3): List of Appendixes.

The Research Tool

Having looked at the references, books and scientific research which covered the questionnaire tool which is related to the analysis of the artistic works including the analysis of the mural; followed by preparing a questionnaire form which includes several axes and each axis consists of several paragraphs. Concerning what is related to the knowledge of the points of view related to those receivers with the modern digital techniques and from the artists where the components of the questionnaire form are divided into six axes each including several paragraphs attached to it is photographs of them. This necessitates from the artist to answer each paragraph by selecting one from the following three selections: (Achievable, Achievable to a certain extent, Un-Achievable). By calculating the number of repetitions of the answers for each selection, the results are extracted based on the selections for each paragraph. Eventually, the Total Average is extracted for each of the research tool axes. This tool passed through several stages. Review the Questionnaire Form - List of Appendixes.

1) **Apparent Validity of the Tool:** The best action to achieve the apparent tool's validity is presenting the tool to a number of experts to estimate its paragraphs were the Validity Coefficient will be calculated. If the questionnaire tool which was prepared with its axes (Three Axes for the formational unit elements and four axes for the features of the formational unit) and with a Total of (26) Paragraph, were presented to a group of experts in the fields of drawing, design of drawings, graphics & digital art, then some simple amendments were performed on it especially on the way of presenting the paragraphs, then the resultant after performing the amendments on the application form, these experts unanimously stated the validity of the tool in terms of truth.

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2) **Implementation of the Tool:** The tool was applied on the study sample individuals whose number was (20) male and female from Diyala governorate artists. The questionnaire process was performed for the period from: 15/1/2015 until 18/2/2016.
3) **The Statistical Means**: In order to process the data state in the study, the statistical means were used in measuring the validity and steadiness of the tool and processing its data such as Pearson Correlation between the paragraphs and heir axes in addition to calculating the repetitions and the percentages to extract the research results.

III. RESULTS, CONCLUSIONS & RECOMMENDATIONS

Having collected the questionnaires Forms related to the research tool and analyzing its data based on its axes and paragraphs, the following results were reached:

First Axis: The Elements of the Formational Unit

Table 2: Results of Artists Answers on Axes of the Formational Elements

T	*Elements of the Formational Unit.*		*T*	*The aspects Influencing Design of Mural.*	*Achievable*		*Achieved to a Certain Extent.*		*Not Achievable*	
					Num	*%*	*Num*	*%*	*Num*	*%*
1	Shape & Form	Nature of Formational Pattern.	1	Main Engineering Shapes.	13	65	4	20	3	15
			2	Free Engineering Shapes	11	55	5	25	4	20
			3	Mixed Shapes	1	5	6	30	13	65
2	Directional	Shapes Axis	4	Horizontal	11	55	7	35	2	10
			5	Vertical	11	55	6	30	3	15
			6	Inclined	16	80	4	20	-	-
		Directions of Shapes	7	Central Direction	12	60	6	30	2	10
			8	Dual Direction	4	20	2	10	14	70
			9	Singular Direction	7	35	7	35	6	30
3	The Volume	Optical Volume Value	10	Small Dimensions	15	75	5	25	-	-
			11	Intermediate Dimensions	15	75	4	20	1	5
			12	Large Dimensions	15	75	5	25	-	-

Looking through Table (2) shown above, concerning the elements of the formational unit (Shape & Form) and within the paragraph on the nature of the formational patterns and the scope of its validity, we notice that the main engineering shapes and the free engineering shaped achieved the formational unity and according to the artists responses. Note that 65% of the artists that the engineering shapes which were executed using the digital control techniques achieved the formational unity; whereas 55% of these artists see that the free shapes which were represented by the part related to faces of the department's teachers, were achieved; Also notice that 25% of the artists see that it is achieved to a certain extent. But in all the cases it's the rate of achievement is good if we assume that there is a middle cut in the building which prevented the mural having continuity in addition to there is no background for the shapes. As for the blended shapes, they represent a very small ratio and do not influence the formational unit on which the artists agree upon in not achieving it.

Concerning the element of the direction and in the direction of shapes paragraph, the prevailing achieved direction is the central direction where 60% of those who were questioned by the questionnaires forms see that the centralized direction is achieved and 30% of them see that it is achievable to a certain extent which is in contrast to

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the dual-direction which only achieved the formational unity at 20% and the singular unity at 35%. This matter follows the nature of the shapes patterns executed by the digital control machine (CNC) where it followed the centralization patterns and the central repetition for the circular shape. It is also linked to the size paragraph where the repetition of the small, medium and large volumes in a proportional form, resulted in achieving the optical volumetric paragraph. This resulted in achieving the formational unity through this element where the artists who were questioned agreed upon achieving this value at 75%.

The Second Axis: Features of the Formational Unity

Table 3: Results of Artists Answers on Axes of the Formational Elements Unity

T	*Features of the Formational Unit.*		*T*	*The aspects influencing Design of Mural.*	*Achievable*		*Achieved to a Certain Extent.*		*Not Achievable*	
					Num	*%*	*Num*	*%*	*Num*	*%*
1	Equilibrium	Implied Equilibrium	1	Imperfect Symmetry (Axial)	15	75	3	15	2	10
			2	Imperfect Symmetry (Radiation)	11	55	5	25	4	20
			3	Imperfect Symmetry (Rotational)	12	60	4	20	4	20
			4	Non Symmetrical	3	15	3	15	16	80
2	Harmony	Proportional Base & Proportional Systems Patterns.	5	Arithmetical Proportion.	16	80	3	15	1	5
			6	Engineering Proportion.	17	85	2	10	1	5
			7	Rhythmic Proportion.	17	75	3	15	2	10
		Values of Regular Rhythm	8	Perfect Repetition	15	75	3	15	2	10
			9	Regular Succession	17	85	3	15	--	--
			10	Regular Continuity	17	85	3	15	--	--
		Values of Irregular Rhythm.	11	Variable Repetition	14	70	2	10	2	10
			12	Irregular Succession	3	15	2	10	15	75
			13	Irregular Continuity	4	20	2	10	14	70
3	The Dominance	Approved Regular Base.	14	Organization Axis	16	80	2	10	2	-1
			15	Organizational Surface	12	60	2	10	6	30
			16	Organized Volumes	18	90	2	10	--	--
4	Vitality	Includes the Spatial Tension.	17	Relationship of elements with each other.	14	70	4	20	2	10
			18	Relationship of the elements with boundaries of Visual Scope.	14	70	4	20	2	10
		The Tangency	19	Tangency of Corners	11	55	3	15	6	30
			20	Tangency of Edges & Sides.	8	40	3	15	9	45
			21	Tangency of Corners, Edges & Sides.	10	50	6	30	4	20
		Overlapping	22	Total Overlapping	8	40	2	10	10	50
			23	Partial Overlapping	11	55	5	25	4	20
		Intersection	24	Penetrating Intersection.	11	55	4	20	5	25
			25	Locked Intersection	12	60	5	25	3	15
			26	Interlinked Intersection	11	55	2	10	7	35

Table (3) shows concerning the formational unity and scope of its eligibility using the digital techniques as an enriching media in implementing the mural of the fine arts college. Within the equilibrium paragraph, the artists agreed upon that the formational unit is achievable by the appearance of equilibrium because the values of symmetry

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were well achieved including the imperfect - axial symmetry which was achieved at 75% and the imperfect & radial symmetry at 55%. In this aspect, it was also found that 25% which was achieved to a certain extent in addition to the achievement of imperfect rotational symmetry. All the artists stated that the equilibrium has been achieved and that the value of the non-symmetry is not achievable at 80% which points out that the formational unity is not achieved in the mural.

As for the aspect of the Harmonization, referring to Table (3) where we find that most opinions of those questioned, found that the mural has achieved the feature of smoothness which was represented by the proportional base and the patterns of the proportional systems. It was found that the Arithmetical Proportion was achievable at 85% and that the engineering and harmonious proportions have been achieved. This is in addition to the values of the rhythms which were represented by perfect repetition, ordered continuity which are achieved at ratios which range between (75% - 85%) which is a signal to achieving the values of the organized rhythm in contrast to the irregular rhythm in which the variable repetition was achieved at 70% and not achieving the irregular graduation and the un-ordered continuity at 75% and 70% respectively. This relies on the type and requirements of the mural design where the appearance of the harmonious has its existence achieved and consequently pointing at using the digital techniques as an enriching media which formed a success factor to achieve the formational unity. In case the appearance of the dominance, the main and dependent factor where the opinions favor achieving this appearance with ratios which ranged between (60 - 90)% and according to the type of the ordered basis which relied on the axis or organization which is achievable at 80% and the surface of the organization 60% and the ordered volumes at 90%. This points out that the dominance in the mural was to change the ordered volumes which were represented by the shape of the circle which was designed by the UCANCAM Program and executed by the Digital Control Machine (CNC).

Finally, in the scope of the formational unity features, the vitality factors played a role in the success of the idea of the enriching digital media either in terms of the design or the execution where we find within the axis of the spatial tension which points at the achievement of the relationship of the elements with each other at 70%; and the relationship of the elements with the boundary of the optical scope at 70% too. The Tangency factor had a media role in achieving the formational unity where the tangency ratio ranged from with its various shapes (Corners tangency, edges and sides tangency, corners, edges & sides tangency) ranged from (40-55)%. This matter was repeated with the overlapping factor and with the same ratios. The intersection factor had a complementary role which has its ratio between (55-60) % from the ratio of the questionnaire sample where the penetrated intersection, closed and interlocked which was achieved and at the rate of (10-25) % that it was achieved to a certain extent. These are acceptable percentages since the intersection is not the main factor in the vitality in the mural.

Finally, through the Questionnaire Form Results, we find the elements and features of the formational unity. As for the aspects related to the digital media, it was achieved and with good ratios i.e. the formational unity is achieved as a whole.

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IV. CONCLUSIONS

- The uses of the digital techniques enrich the process of achieving the formational unity in the mural designing arts which gives better results.
- The eligibility of the elements and features of the formational unity through utilizing from the digital techniques, was the main factor in controlling the production of the college of fine arts mural.
- The success of any work which is based on the interlinking between the designer and the implementer, depends on the scope of using the digital media and according to the need for it.

V. RECOMMENDATIONS

- The two researchers recommend the artists and the learners in the artistic scope to look at the modern digital techniques and coping with their development to support their work in the artistic designing and formational aspect.
- The two researchers recommend the necessity that the educational schedules in the fine arts colleges and in its all departments must include materials and lessons which are linked to the programs and the digital control tools so as to contribute in the enriching of the artistic works.

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APPENDIXES

The Final form for the Research Tool – Questionnaire Form

Elements & Features of Formational Unity using the Mural Digital Techniques for the Fine Arts College – Diyala.						
Axes of elements of Formational Unit.			Aspects Influencing the Design.	Achieved	Achieved to a Certain Extent.	Not Achievable
Form & Shape	Nature of Formational Patterns		Basic Engineering Shapes.			
			Free Engineering Shapes.			
			Mixed Shapes.			
Directional	Axis of Directions		Horizontal Axis.			
			Vertical Axis.			
			Inclined Axis.			
	Direction of the Shapes		Central Direction.			
			Dual Direction			
			Single Direction			
Volume	Optical Volumetric Value		Small Dimensions			
			Medium Dimensions			
			Large Dimensions			
Axes of Axes of Formational Unity			Aspects Influencing the Design.	Achieved	Achieved to a Certain Extent.	Not Achievable
Equilibrium	Non Formational Equilibrium		Non Perfect Symmetry (Axial).			
			Non Perfect Symmetry (Radial).			
			Non Perfect Symmetry (Rotational).			
			Non-Symmetrical.			
Harmonious	Values of Ordered Harmony		Perfect Repetition.			
			Ordered Successions			
			Ordered Continuity.			
	Values of Un-ordered Harmony		Variable Repetition			
			Non Ordered Succession			
			Un-Ordered Continuity			
Dominance	Approved Ordered Basis		Ordered Axis			
			Ordered Surface			
			Ordered Volumes.			
Vitality	Nature of the Spatial Relations		Relationships of elements with each other.			
		Overs spatial tension	Relationships of elements with optical scope boundary.			
	patial Tension		Corners Tangency			
		Tangency	Edges & Sides Tangency			
			Corners & edges Tangency.			
	Nature of Spatial Relations	Overlapping	Total Overlapping			
			Partial Overlapping			
			Penetrated Intersection			
		Intersection	Closed Intersection			
			Overlapped Intersection.			

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Name of the Experts Utilized in Validity of the Questionnaire Form

	Name	Scientific Grade	Specialty	Place of Work
1	Dr Aad Mahmoud Hamady	Professor	Plastic Education	College of Fine Arts – Diyala University.
2	Dr Ibrahin Nema Mahmoud	Professor	Optical & Acoustic Arts	
3	Dr Maan JAsim Mahmoud	Assistant Professor.	Arts Education	
4	Dr Golan Hussein Alwan	Lecturer	Sculpture	

Figure 1: Mural Portraits titled "Flow of Traffic." Artist: Marcus Lerner, Germany: 2007

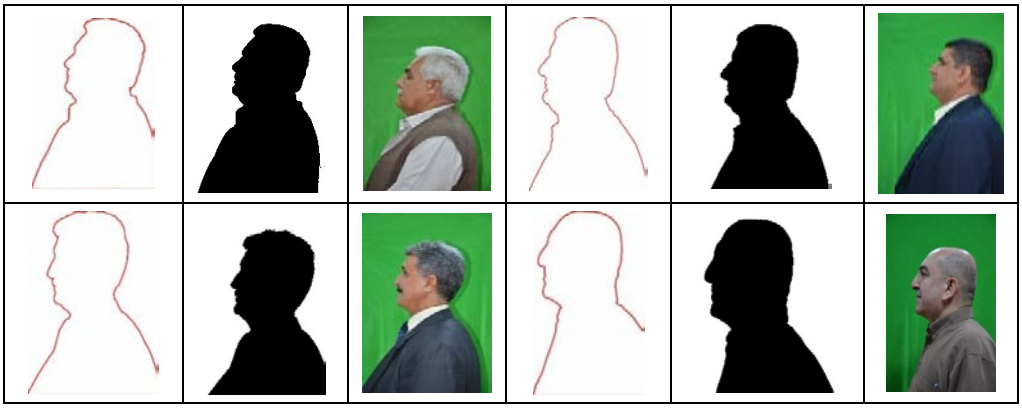

Figure 2: The Calculated Digital Processors for Educational Portrait through the Digital Design & Control

Figure 3: The Fine Arts College Mural – Diyala University, Arts Education Department Façade, Academic Year (2014-2015)

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