Effectiveness of virtual reality and its impact on modern sculpture

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Abstract:

The current developments that have emerged recently in the artistic have arena influenced strongly the creative intellect of the sculptor, made it able to create works of art able to keep pace with this development, Today Virtual reality is one of the most important design techniques, and has become an integral part of everyday life, from this point came the idea of research to identify the problem of the relationship between virtual reality and the art of sculpture and its suitability to develop applied frameworks, and this study deals with shedding light on the effectiveness of reality And methods of integration in the field of sculpture in the framework of this intellect on the scene of art recently. It also includes an analytical study of a group of works of some virtual sculptors, and how each artist handled his work according to this new medium and how it organizes the elements of the work of art.

The research recommends that sculptor must make the most of modern digital technology and integrate it into its artistic production in line with the spirit of modern ages.

The problem of the research is to show the philosophical dimension of virtual reality technology and its impact on the intellectual and creative visions of the sculptor in the face of the age of technology.

The research aims to:

- To recognize the effect of virtual reality on the acquisition of imagination and creativity.
- Identify the realities and concepts of virtual reality technology.

The research in solving the problem was based on the evolution of the idea of virtual reality and its effectiveness in the creative visions of contemporary sculptor through the presentation of some works of virtual sculpture.

The research in solving the problem was based on the following axes:

1. Historical development of the idea of virtual reality.
2. Classification of Virtual Reality systems.
3. From reality to virtuality (Some concepts associated with virtual reality)
4. Effectiveness of virtual reality in sculpture.
5. Virtual Sculpture Tools.
6. Conclusions and recommendations.

Keywords: virtual reality, modern sculpture, augmented reality, mixed reality.

ملخص البحث:

إن التطورات الحالية التي نشأت على الساحة الفنية مؤخراً أثرت بقوة على الفكر الإبداعي لدي المصمم النحات ، مما جعله قادرًا على إنشاء وابداع أعمال فنية قادرة على مواكبة هذا التطور ، فالواقع الافتراضي واحد من أهم تقنيات التصميم اليوم بل وأهمها، وأصبح جزءاً لا يتجزأ من الحياة اليومية ، ومن منطلق هذه النقطة جاءت فكرة البحث لتحديد مشكلة العلاقة بين الواقع الافتراضي وفن النحت ومدى ملاءمتها لتطوير الأطر التطبيقية ، وتتناول هذه الدراسة تسليط الضوء على فعالية الواقع وأساليب التكامل في مجال النحت في إطار هذا الفكر السائد على الساحة الفنية مؤخرًا. ويتضمن أيضًا دراسة تحليلية لمجموعة من الأعمال لبعض نحاتي الواقع الافتراضي، وكيف تعامل كل فنان مع عمله وفقًا لهذه الوسيلة الجديدة وكيفية تنظيمه لعناصر عمله الفني.

يوصي البحث بأن يجب على النحات أن يستفيد إلى أقصى حد من التكنولوجيا الرقمية الحديثة ويدمجها في الإنتاج الفني بما يتماشى مع العصر الحديث والتعبير عن الروح الجديدة والتي تمثل المقومات الحضارية للعصر الراهن.

تتمثل مشكلة البحث في إظهار البعد الفلسفي لتكنولوجيا الواقع الافتراضي وتأثيره على الروؤى الفكرية الإبداعية للنحات في عصر التكنولوجيا.

يهدف البحث إلي:

- التعرف على تأثير الواقع الافتراضي على اكتساب الخيال والإبداع.
- التعرف على حقائق ومفاهيم تقنية الواقع الافتراضي.

استند البحث في حل الإشكالية على المحاور التالية:

- التطور التاريخي لفكرة الواقع الافتراضي.
- تصنيف أنظمة الواقع الافتراضي.
- من الواقع الى الواقعية (بعض المفاهيم المرتبطة بالواقع الافتراضى).
- فاعلية الواقع الافتراضي في النحت.
- أدوات النحت الافتراضي.
- النتائج والتوصيات.

الكلمات المفتاحية: الواقع الافتراضي، النحت الحديث، الواقع المعزز، الواقع المختلط.

Introduction:

The world is taking rapid steps towards every new thing new. The countries are competing for leadership in the fields of technology. Sculpture has been a part of this competition, and perhaps also benefited from them. Science and art are two elements that come together in one crucifix to produce vocabularies that help in building the general form of society. Science and art are two sides of a single coin. Art has provided society with all that contributes in the advancement of evolution, and has harnessed the science of nature to subjugate everything available in the world to benefit from it in all areas of life.

The issue of modernity has become very sensitive to the paths of art in general and in the formative, plastic arts in particular, and their handling varies according to the logic of each individual artist, although the characteristic phenomenon in the overall artistic and behavioral approach is the search for new, Sculpture as it was and will remain through the ages one of these arts that its presence in everyday life is clearly evident. Virtual reality technology has

been one of the most modern technologies used in the field of sculpture and its transfer from the real world to the fantasy world. It is the basis of virtual reality that it depends on making the acquired experience is not related to place, time or individuals. The experience is self-sustaining and evolving in the development of the age and its inventions, so that the experience gained through it becomes a dynamic experience that creates a creative and innovative generation and stimulates thinking skills.

Statement of the problem:

The problem of research was to show the philosophical dimension of virtual reality technology and its impact on the intellectual and creative visions of sculptor in the face of the age of technology.

Research importance:

1. Highlight the technology of virtual reality and its impact on the implementation of innovative sculptural works.
2. Directing the attention of specialists in the field of arts to an important field such as virtual reality as a fertile field to benefit from it in facilitating the process of creativity.

Objectives:

1. To recognize the effect of virtual reality on the acquisition of imagination and creativity.
2. Identify realities and concepts of virtual reality technology.

Methodology:

The researcher follows the descriptive, analytical approach.

Virtual reality concept

It is an interactive, multi-user interactive environment where the individual is more interactive with the content. The user actively participates in the activities offered through freedom of navigation, navigation and interaction. These environments provide an extension of real life experiences while providing different degrees of handling and performance for the task to be accomplished.

Historical development of the idea of virtual reality

The concept of virtual reality was first introduced in 1989, and the idea began when people realized that the world we live in is not the only one that exists, but that the world we live in is a starting point. Virtual reality in its simplest definition is a man-made technological world to be deal with the third dimension, which plays an important role in virtual reality technology so that it can see the three-dimensional outputs as in concrete reality, supervised by the audio, visual and tactile senses to reach an experience similar to reality.

Other terms refer to the term virtual reality as artificial truth in 1970, the term cyberspace appeared in 1984, and in 1990 the term virtual worlds and virtual environments emerged. Virtual reality imposed itself on the scene after computers and means of information transfer became essential in our lives, and moved to many different activities such as education, medical, military, entertainment and recently in the design.

The virtual reality starts back to the early 1980s. Geron Lannier, the founder of VPL, was the first to come out with virtual reality. Lannier was one of the first inventors of virtual reality

applications and equipments, including gloves that monitor the user's hand movement and provide tactile effects, and was one of the first designers of virtual reality applications in the field of medicine, which allows doctors to simulate operations in different ways to predict the shortest way to actually perform.

The American thinker Arthur Clark is one of the first dreamers of virtual reality half a century ago and has published a book on science fiction called "A glimpse of the future." The presentation of the book included his view of the world without distances or boundaries and the existence of a future city, and advanced electronic devices to meet, consult and discuss many important issues through these electronic devices that do not require their presence at those sites despite the distance of places erne with long distances.

The virtual reality of the cave, which was created at Elliott University in Chicago, USA, was inspired by Dan Sandin, Tom Devani and Carolina Cruise, where a virtual environment of room size was shaved through a virtual environment that simulated reality Once you enter the room, images of many objects are displayed in 3D to display the real-life environment by natural standards. The user can navigate the cave freely and the head tracking system Continuously displays and adjusts those images.

Classification of Virtual Reality systems

In the virtual environment system, the computer generates sensory impressions that are introduced to the human senses. The type and quality of these impressions determines the level of indulgence and the sense of being in virtual reality. Ideally high resolution, high quality and consistent on all screens, information should be provided to all user senses. Furthermore, the environment itself must interact effectively with user actions. However, this practice differs greatly from this ideal case. Many applications only stimulate one or less of the senses, often with low-quality and asynchronous information. We can assemble virtual reality systems according to the level of user indulgences where researchers divide virtual environments into:

1. Non-immersive

Here, the 3D landscape becomes part of the physical environment, and the subjects are fully responsive to the real environment, so that the virtual world can be viewed or manipulated through the computer screen or electronic gaming devices.

2. Semi-immersive

Where the subjects can lead in both the real environment and the virtual environment, the system is used to simulate systems that are difficult to exist near or inside and reflect interaction with them to maximize opportunities to understand the performance of its functions and examples of this reality simulation buildings, cars and aircraft.

3. Immersive (fully immersive)

In which the subjects are isolated visually from the real environment, and the user tells them that there is no real world, he does not see or feel anything except the world made by the computer and he can see this world by a helmet or electronic glasses related to the computer, or wearing an electronic glove in his hands as a way to reflect reality by touching things that are embodied in this imaginary reality to think it exists.

From reality to virtuality (Some concepts associated with virtual reality)

a. Augmented reality

The term enhanced reality refers to the possibility of combining virtual information with the real world, and this technique adds a set of useful information to the visual perception of the human. When someone uses this technique to look around, objects in the environment around him are equipped with information that swims and integrates with image that are Seen by the person.

The technical development has also contributed greatly in the emergence of this technology, and we see it in personal computers and mobile phones after it was a monopoly in the research laboratories of large companies, and, it relies on enhanced reality technology to identify the system and linking the parameters of the real reality of the appropriate element which is pre-stored in memory as geographical coordinates or Information about a place or video definition or any other information related to real reality and depends primarily on the use of the camera tablet, mobile phone or special glasses to see the real reality that the program linked to, the transformation of the reality of a virtual, enhanced real information.

b. Mixed reality

In 1774, when the relationship between virtual reality and enhanced reality was defined in its classification of enhanced reality, called hybrid reality, mixed reality technology merges the combined reality technology of virtual reality with enhanced reality in a single virtual environment. Mixed reality may be the result of a combination of real and real, enhanced reality, or between virtual reality and enhanced virtual reality.

The blended reality does not separate the learner from the real reality, but connects it to virtual reality, and uses them Together at the same time. For example; learners produce stereotypes using paper pulp and then use them This is the real reality in the creation of virtual reality.

Effectiveness of virtual reality in sculpture

The new visions and concepts of life and society at the beginning of the twenty-first century revealed a new form of sculpture that resulted in contemporary art that carried aesthetic and critical concepts, intellectual visions and expressive tools that differed from those that were recognized as clear and fundamental bases for the form of artistic work. The new transformations of the artistic image dictated by the philosophy of contemporary intellectual and aesthetic consciousness.

Therefore, the art must keep pace with its age and follow the path of evolution, but without being completely separated from the original and without loseing its identity and originality, expressive action by nature is a viable and progressive action, it requires a certain development.

At the end of the twentieth century and the beginning of the twenty-first century, contemporary artistic trends and methods of sculpture were based on past schools and theories. The result was based on their philosophical and artistic ideas, which were based on a technical approach that assesses the present from the perspective of the future. The ocean, the modern trends of sculpture built on the basis of technological interaction between the recipient and the artwork, resulted in interactive models rich in possibilities and modern concepts, that developed a set of new ideas and technologies that created new environments

for communication The new concept of works of art is based on the interaction of the recipient with the work of art by generating a set of kinetic and interactive forms. Such experiments stimulate the change of the interactive model between man and machine to create a series of new ideas and technologies that can be used to formulate new approaches and proposals that bear fruit in creating Interactive and new virtual environments

This virtual reality has become a fact that must be reflected in the vision of the sculptor, because the aesthetic picture must be from the reality of times, ideas and progressive values, within its applications to be accompanied in the context of visual integrated with the dynamic evolutionary interactive era. The relationship between art and technology is an integral and imperative necessity at the present time because all creations in the various arts are accompanied by the development of modern digital techniques, which resulted in modern methods and techniques that made this connection a fundamental component in formal, psychological and expressive relations. The design and presentation of technical workers has become a contemporary goal that allows interactors and viewers in different locations to interact with the artwork and display it in a multidimensional world of virtual images, and this is what makes virtual reality one of the most modern means used in the field of sculpture, the simulation model of the work of sculptural or shapes and tools inevitably has a clear effect in performance, and the use of virtual reality in sculpture is necessary to activate and motivate expressive expressions, it is an exotic pattern of patterns of interaction in sculpture based on the idea of investing technical possibilities and means of communication to communicate the intellect of art to the student or artist at any place and time.

Virtual reality is one of the most important technological means for visual simulation of artists where the artist can experience models of simulation of natural or manufactured forms, which helps to develop new visions and access to better solutions in the process of plastic and in the final output, and thanks to virtual reality technology it became more fun ,more economical less Time and less expensive as it is possible to create works of art and virtual exhibitions of sculpture works involving the artists of the world from a distance where art works are presented in a way that allows everyone to travel without traveling or moving, and as an intermediary in the art, limitless in creative abilities, all possible possibilities of form, space, and sound can be subordinated to the user's desire. Since virtual reality eliminates physical laws, its art allows his users to live in dreams and a world of imagination. The sculptor resorted to virtual reality to create virtual models instead of real tangible models as well as when there is a large cost of implementation, to display his artistic work to the public, or to evaluate the work of art by institutions or companies to accept the idea or as a means of persuasion before it begins. Interactive devices such as special gloves, virtual glasses and interactive multimedia.

Virtual reality has become a necessity in the world of sculpture because of its advantages serve the creative process and facilitate the sculptor work, **including, but not limited to:**

1. save time, effort and cost.
2. Get quick and direct results.
3. Several design and implementation hurdles have been overcome.
4. Provide an ideal environment for sculpture teaching.

5. The sculptor has become an explorer of various aesthetic visions that are difficult to reach in ordinary ways.
6. Exchange of experiences and artistic design cultures among designers from different world.

Virtual Sculpture Tools

- **Oculus Medium**

It is a VR experience that allows users to sculpt, design, draw and create objects in a virtual reality environment. Medium also allows the creation of expressive artwork, whether the user is entirely novice or a professional artist. Medium uses touch controls to enable intuitive hand movements and movement for a natural touch experience, Artwork or print it by three-dimensional printing.

Fig. (1) Illustrates the shape of the glasses used in the virtual sculpture

- **Oculus Rift**

Is a VR device that provides users with a 360-degree immersive view of the 3D virtual reality world? The system includes a Rift headset, Oculus and two Oculus Touch controls. Headphones and sensors are connected to a PC console workstation via USB cables and headphones. Oculus Touch is a device designed and engineered specifically for planting your hands in the virtual environment. When using Rift, bring your hands to the VR with Oculus Touch. The sense of the hand that this pair of tracked controls makes you feel that your virtual hands are actually yours. Touch, lets you manipulate objects in a virtual environment with great accuracy and ease of use.

Fig. (2) Oculus Rift virtual reality headset

- **Htcrevive**

The manufacturer of other important devices has recently stepped up the field of head-mounted screens. HTC, known primarily as the smart phone market, is developing the Re Vive headset, the short name HTC Vive with a major gaming distributor. Vive uses a different technology to track the position of users across the room. Where Oculus Consumer Version 1 (CV1) will use a constellation tracking system with LEDs (external tracking), the HTC approach is an internal tracking. The user must fix two laser emitters in each corner of the chamber, which will move the arc of the laser light into the sweeping pattern. The headset can then track the exact location in the room via multiple spatial binoculars, based on the signal time received in each diode, allowing the user to move freely around the room and follow it all the time in its virtual environment, rather than just sitting. However, due to lack of wireless display technology currently available bandwidth or latency to provide VR to the user, one is still limited by Headphone Cables. Customized computers are already available to meet this warning, but are not considered here, because they are specialized construction and / or expensive construction and maintenance.

Experimental experiments using virtual reality technique

The goal of the artist in the past twenty years to restore art to its historical position and to be free from the one-sided view, and to achieve the vision to the level of pluralism and this was achieved by virtual reality can be directed to the art of democracy and taste in which it stands in exchange for the break of modernity with the public: Art is one of the constraints of virtual reality, so that the virtual reality environment is dominated by digital means, such as screens, glasses and data gloves, which allow for the formulation and control of the form and proportions of the work of art. Virtual reality technology will become an integral part of the world in the third millennium and will be the most appropriate alternative in the arts as a whole.

The following is an analytical descriptive presentation of selected models of the effectiveness of virtual reality in sculpture to determine its possibilities, which have made it a creative and artistic necessity to recreate a realistic sculptural world with infinite possibilities of vision, image, sensibility and infinity that contemporary art seeks.

1. The first work of Jonthan Yoe

"My interest in virtual reality has always depended on how to use the medium in a technical way," said sculptor Jonathan Yoe. "Much early exploration came through a form of interactive narrative, but the possibility of more was always there. With the early Google version of Tilt Brush, the free 3D painting became a reality: once it became available, the artists began to build it, but they were also limited by the inability to transfer these three-dimensional models, that was easily prepared from the software in preparation for three-dimensional printing. The translation from the model to the printing is rarely from one process to another ".

1.1 Work data

Artist name: Jonthan Yoe.

Quality of artwork: Sculpture Default "oculus medium ".

Name of the artwork: A greeting to Polozi (self image). Date of production: 2018. Place of Work: Exhibition at the Royal Academy of London at the Royal Academy in London.

Characterization of the components of the technical work

The bronze portrait of Jonathan, widely known as "Greetings to Bolusi", was his first sculpture invasion and was an evolution in the tradition of creating a self-image, produced using advanced technology. This is the first statue to be designed using reality. The innovative default is then incorporated into bronze as part of a major exhibition at the Royal Academy in London.

The body and shape of the whole work tend to be geometrical, and the texture of the work tends to have a soft, sharp texture.

The work was derived from works from three-dimensional surveys in virtual reality instead of looking at mirrors or working from photographs, by making solid structures based specifically on the kind of gesture marks used by painters usually on canvas.

1.2 how to organize the artwork?

- The balanced artwork is symmetrical.
- The rhythm is generated by repeating the slides.
- The space inside the artwork is a deep vacuum.
- The luminous areas of the artwork are generated by the reflection of the bronze slides, while the dark areas occur from the clouds created by the overlapping of the slides.

1.3 Significance of artwork

As someone who always wanted to work on 3D design and never learned how to do it in the traditional way, it was interesting to have helped in creating a new process that could probably be described as a combination of painting and sculpture. Use the 3D scanner and look at yourself in a way that was not yet possible. What is interesting is the combination of these two scanner technologies, along with the use of virtual reality technology and three-dimensional printing techniques, which may be a new way of making sculptures and others that may inspire other artists from a range of disciplines to enjoy them as well. I hope that these pieces will not just show how artists can take advantage of new technology in unexpected ways, but also provide a speculative glimpse of how we can all use it in the future.

1.4 Evaluation and tasting of artwork

- Fit the artwork with the environment surrounding it.
- The artist succeeded in communicating his idea using virtual reality technology.
- The meaning lies in the work and it seems clear by emphasizing the idea of repeating the slides.
- This work belongs to the virtual sculpture class, which is designed using virtual reality tools.

Fig. (3) During the artist designing the art of virtual reality

Fig. (4) The final form of the portrait after printing it with a 3D printer and stamping it with bronze

2. The second work of Dom Qwek

"After I finished Rifting on my computer, I installed medium immediately and started to play it," Dom says of his work using virtual reality technology. "The first thing that comes to mind was the sense of space within the virtual reality environment. Because of years of working in front of the computer, my mind was not trained to move my head while sculpting on my computer, Now, when I did this in virtual reality, I realized VR power. Suddenly; the scale means much more to me. Being able to sculpt on a large scale and literally walk around your statue, is less of a freedom. Similarly, you can work on a small scale and read your statue at this level. That flexibility was amazing. Meaning scale is the real reason for sculpture in virtual reality in my honest opinion. "

2.1 Work data

-Artist name: Dom Kwek Dom Qwek.
- Quality of artwork: Sculpture Default "oculus medium".
- Name of artwork: Skull skull.
- Date of production of the artwork: 2018.
- Where art works: Artist's page on Facebook.

Characterization of the components of the technical work

- The artwork is an illustration of the skull with some abstraction at some parts of it.
- Artwork Membership.
- The work contacts range from soft to crisp.

2.2 How to organize artwork

- The main focus (the Visual Optics Center) is located at the top of the skull because it represents the largest workload.
- Equilibrium in the artwork is asymmetrical.
- There is a rhythm generated by the diversity of touchers and surfaces.
- The vacuum in the work has a reasonable depth of the eye cavity, which emphasizes the contrast with the high surfaces in the work.
- The bright areas of the work are in the salient areas, distributed in the work while the dark areas are in the cavities and the deep surfaces.

2.3 Significance of artwork

This work is the second work of the artist using the virtual reality technique, and here shows the impact on the human body as usual all his work, especially the skull, which shows the extent of the transformation of human mind through the stages of his life and the impact of thinking threads tangled within his mind.

2.4 Evaluation and tasting of artwork

- The artist succeeded in communicating the pressure and thinking on the human mind.
- Fit artwork size with surrounding background.
- This work belongs to the Virtual Sculpture where it was used in its default sculpting tools design.
- The presence of a large fracture in the back of the skull led to confirmation of the sense of the impact of stress and excessive thinking on human mind.

Fig. (5) Picture of the work from the front and back

3. The third work of Giovanni Nakpil

One of the most famous sculptors, as a child who grew up in Manila, Giovanni Nakile was greatly influenced by the magic of science fiction and horror. After studying computer graphics in Toronto, his multidisciplinary career led him to Maryland, Texas, California and Washington as a digital master of industrial light and magic Giovanni has starred in “Star Trek” and “The Avengers”, among other notable Hollywood movies, and then transformed the gears by designing and building video game assets for Valv Corporation. Giovanni is currently working at Oculus, where he pays himself more and helps define the virtual reality shape.

1.3 Work data

Artist name: Giovanni Nakpil.
Quality of artwork: Sculpture Default "oculus medium".
Date of production of the artwork: 2017.

Characterization of components of the technical work

- The artwork consists of sculptures of "part of a tree - a group of children - a turtle carrying children and a tree."
- The contact varies between coarse and soft.
- General Authority for Labor.

2.3 How to Organize Artwork Elements?

- The main focus (the Visual Action Center) is on the two children who are propped up by the tree, which is what the eye first signed. Then the eyesight moves to the head of the Salafis.
- The equilibrium is symmetrical.
- The rhythm generated by the repetition of the human element of children, the harmony between the organic lines and the sharp and smooth texture.

3.3 Significance of artwork

The situation of the children's geo on the turtle to emphasize the childhood of the calm without any problems or pressures of life was; the turtle chooses the right to be slow, as the type in the movements of children and their situation between the sleeper and meditating to confirm the differences between different types of children.

3.4 Taste the artwork

- The artist succeeded in communicating the idea of childhood. Using it as a solvent.
- Fit working size.
- This work belongs to the virtual sculpture where it was designed using oculus medium.

Fig. (6) Picture of artwork during design on medium

4.The fourth work of Dan Crossland

This is the second work of Cross on medium, and Crossland is one of the most famous digital sculptors.

1.4 work data

Artist Name: Dan Crossland.
Art quality: The default sculpture "oculus medium" presented in Maya.
Work Title: Study of Carlos Haunte.
Date of production of the artwork: 2017.

Description of artwork

- The work is an anatomical study of the Carlos scheme.
- The whole body and shape of the work tends to be organic, and in general we find the texture of the work tend to be soft texture.

2.4 How to organize the elements of the artwork

- The main focus (the center of visual attraction of the work) is located in the torso of the woman, which is the first thing on the eye.
- The balance of artwork is asymmetric.
- There is a rhythm generated by the diversity of touches, plaques and lines. - The luminous areas of the work are represented in the prominent surfaces distributed in the work while the dark areas are the cavities and the sunken flats.

3.4 The significance of the artwork

- The main idea of the artwork was based on the anatomical study of the Carlos Haunte scheme.

4.4 Taste the artwork

- The artist succeeded in communicating his idea by accurately explaining the fine details.
- The artist was interested in the work plot and used organic lines to emphasize the purpose and content of the work.
- This work belongs to the virtual reality sculpture, which was designed using Oculus medium.

Fig. (7) A study of the Carlos Haunte scheme

Research results

1. Provides an interactive virtual environment for the artist, more space for creativity and the creation of meaningful artistic expressions with an integrated realistic vision, giving the sculptor the opportunity to experiment, explore and apply scientific theories in his sculptures, so he can add some elements such as movement and light.
2. scientific development and technology of different virtual reality are credited with the creation of new visions of sculptural forms and gave the sculptor the opportunity to experiment, explore and apply scientific theories in the work of sculptural.
3. The technical goal achieved through virtual reality and interactive multimedia provides an integrated experience that is not connected to space and time, saves time and money.
4.The importance of virtual reality is that, like real reality, it is an effective means to simulate reality, whatever its circumstances and difficulties, through which different environments can be created to mimic the reality that cannot be accessed or coexist with.
5. VR is an effective alternative to the implementation of precision products. Design and manufacturing systems are used in the design and implementation of models of varying sizes, which may not exceed one millimeter in size, thus providing finite precision models.
6. The sculptor is the origin of the work of art while the recipient is the basis of the results and artistic experience seeks to the recipient's intellect to immerse it in beauty, sculptures as an artistic experience its function is not only to have fun and take up space of space but is the reason for the introduction of joy to the recipient.

Search Recommendations

1. The need to call for the continuation of scientific development and expression of the new spirit that represent the cultural components of that era.
2. The importance of integrating technology and virtual reality programs into sculpture teaching curricula.
3. The sculptor must make the most of modern digital technology and integrate it into its artistic production in line with the spirit of modern times.
4. It is necessary to have educational centers to train artists on the use and modern techniques.

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