

Requirements for the development of intellectual and applied art under virtual reality technology

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Research Summary:

Art is an entity whose age is related to the age of man, therefore it is constantly changing to align with the cultural components of each age, Technology comes as a major component in the occurrence of many transformations that affect all aspects of life at both the conceptual and the practical level, This has cast a shadow on the technical trends by reformulating many concepts related to the technical experience, aesthetic standards and the trend in a more effective way towards the use of various new media and solutions that carry an intellectual and practical shift in line with the successive developments.

Virtual reality art is one of the most prominently terms presented by the new media arts as one of the trends of postmodern arts, which was able to create a kind of multi-dimensional dimensions in the artwork, Where it was able to provide interactive environments that bear a set of temporal and spatial dimensions that the artist and recipient's mind interact with, it provides the artist with the ability to draw and design using a set of tools in the digital space to provide interactive experiences with various innovative ideas that allow the recipient to participate and interact with three-dimensional graphics and colors, The technological development has contributed greatly to the diversity and different methods of the artist's employment of the degree of interaction and the indulgence of the viewer with the artwork, especially those that are characterized by the idea of pluralism and the choice of the final artwork form through the interaction of the viewer with the sequence of events.

The research problem is determined in studying the artist's requirements for interacting with virtual reality systems, and how these technological capabilities can be used to apply interactive artworks in an attempt to present new visual visions.

Research problem:

The virtual reality field receives a lot of interest from developers & programmers regarding designing and demonstrating tools, programs and graphical applications that are in line with the needs and requirements of the artist for innovation, drawing and design. The research problem is determined in studying the requirements of the artist designer to interact with virtual reality systems, and how these technological capabilities can be used to apply interactive artworks in an attempt to provide new visual visions.

Research Aims:

1. Increasing the artist's awareness of the latest developments in virtual reality technology in the field of drawing and design, and interest in studying their applied capabilities in an attempt to create contemporary visual visions.
2. Learn about types of interaction tools & drawing programs used in virtual reality systems, and what are their capabilities.
3. Study the diversity of the artist's use of the degrees of interaction in the design of his artwork by analyzing some of the artwork that used virtual reality operating systems.

Research hypotheses:

1. Technology is a fundamental issue in the formulation of art throughout the ages, and the phenomenon of technology influence in the artist's is not new, as new and inherited paradigms from previous eras prove that there is a permanent relationship between technical development in each era and the development of design thought.
2. Technological technologies have changed the way the artist innovates and designs. As their influence on art grows, it becomes necessary to research the data of interactive arts systems and virtual reality, including tools and software, and how these technological capabilities can be employed to apply interactive artwork.

Research themes:

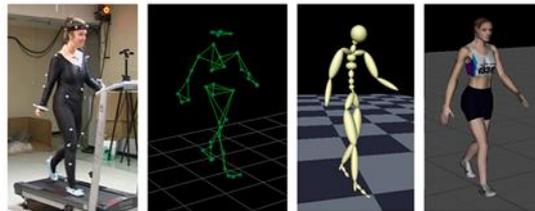
1. Artist designer requirements to interact with virtual reality systems.
2. Examples of interactive artworks implemented with virtual reality technology.
3. A vision that the artist designer can take advantage of virtual reality technology to create distinctive artworks

Research Methodology:

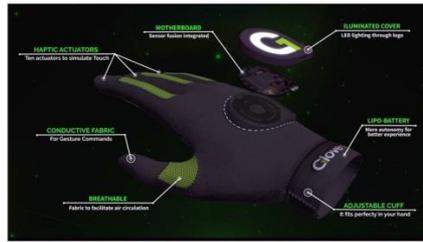
The researcher follows the descriptive analytical approach in order to study the impact of technological development on virtual reality systems, including graphical tools and programs, as well as conducting an analytical study of a set of interactive artworks for a number of contemporary artists to review the most important dimensions and formative methods used for interactive experiences as one of the products of modern media arts.

1. Artist designer requirements to interact with virtual reality systems.

The liberation of the artist from the limitations of reality is one of the most important reasons that contributed to stimulating his imagination to create virtual digital worlds to present new visual insights. A virtual reality system, like other computing systems, requires interaction with two basic elements, Hardware, and Software, through which the user can achieve a state of immersion and full interaction to enjoy all that the virtual reality technology offers us.

A. Hardware:**A-1 (Motion Capture or Motion Tracking) (MOCAP).****A-2 (2D&3D Inputs).**

A-3 (Haptic VR Gloves Devices)



A-4 (Display Devices).



A-5 (Computational Hardware).

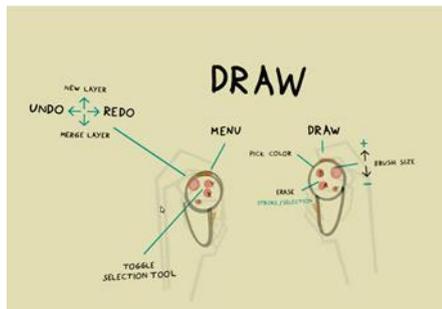
B. Software:

The programs play a major role in the process of creating the virtual environment, including the operating systems or programs for drawing and design, and we will review the most prominent drawing applications that work through virtual reality systems:

B-1 (Google’s Tilt Brush App).



B-2 (Quill App).



2. Examples of interactive artworks implemented with virtual reality technology.

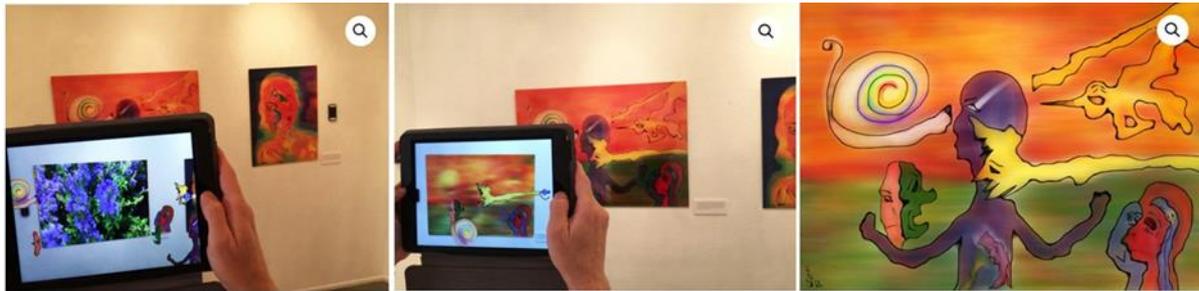
(Dear Angelica): 3D Animations directly painted within VR (Quill Program) – 2017 .



(The Night Café): Interactive Video 360 degree – 2015.



Permission to enter: Augmented Reality art work, The LA Art Association Gallery 825 – 2015.



Research Results:

1. The ideas of media arts in general did not come out of nowhere, but were inspired by the history of their development from previous art schools throughout history, in addition to taking advantage of the available technological capabilities.
2. The artist was freed from the limitations of reality, one of the most important reasons that contributed to stimulating his imagination to create virtual digital worlds in an attempt to present new visions and concepts of plastic art.
3. Virtual reality system, like other computing systems, interacting with it requires the availability of basic elements, namely tools and software, through which the user can achieve a state of immersion and full interaction to enjoy all that the technology of virtual reality systems offers us.
4. Programs, including their operating systems and application software, play a major role in the process of creating virtual environments.
5. The field of art receives a great deal of attention from programmers and developers as it is a partner in creating the virtual reality environment and has the ability to spread different ideas and concepts.

Research Recommendations:

1. The researcher recommends trying to use the potentials of the virtual environments to teach the various educational courses, especially practical and faculties of art, because of what new experiences can add in teaching applied materials.
2. The researcher recommends trying to provide laboratories inside art colleges to train students on how to use virtual reality tools, as well as courses to identify the capabilities of drawing programs and discover methods of drawing in the digital space in an attempt to train students to implement various interactive design experiences.
3. Increasing studies and research related to the employment of virtual reality in the fields of art, due to its capabilities to open new horizons of knowledge and innovation
4. The researcher recommends the necessity of providing faculties of arts with engineers specialized in operating systems and methods of using virtual reality tools, so that their mission is to facilitate and assist students in solving problems related to the implementation of interactive design thinking.

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