

Designing An Art Virtual Exhibition Through Applying Design Thinking Strategy

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Introduction

Art exhibitions are one of the most remarkable places of artistic and cultural communication that link art to society, whether professional art exhibitions or academic art exhibitions. Because of the pandemic, it may be rare or impossible to hold an art exhibition in its traditional form during the pandemic. Accordingly, the alternative was activating virtual exhibitions and applications for art display, which kept channels of communication and interaction open between artists and practitioners. Moreover, Catton & Smith (2021) stated that the pandemic facilitated access to virtual exhibition spaces among users worldwide, which increased interest in exploring multiple virtual viewing platforms. Also, Davis (2021) asserted that virtual exhibitions are a way to recover from the impact of the covid-19 pandemic, through which the sense of the live cultural pulse has been missing, by the interaction in the virtual space, it has become possible to access the windows and portals of museums and art exhibitions. The virtual exhibition prompted the search for an effective solution based on scientific foundations, corresponding with health conditions, and considering the preventive precautions and social distancing that the responsible authorities in Saudi Arabia stress. Therefore, design thinking is a strategy based on scientific foundations that can be applied to determine various solutions for many creative and development projects, which consider promising in scientific research, specifically in Arab scientific research. In turn, we found that virtual exhibitions can be a suitable alternative because they focus on the user experience. Specifically with graphic artworks for which virtual exhibitions provide the optimal technical environment for display due to the digital compatibility between the formats of graphic works and virtual exhibitions. Benandita, Nofrizaldi, and Shapiriani (2021) explained that virtual exhibitions are developed with multimedia and with the help of virtual reality and interactive design, which produces a simulated environment through website and sound to create a specific theme. Hence, the research problem is identified in the following question: *How feasible is it to design and implement a virtual graphic art exhibition through applying the design thinking strategy?*

Research importance

1. The research will support Arab scientific content in the field of designing virtual exhibitions and design thinking.
2. Applying design thinking strategies to many creative and developmental areas and situations.
3. Finding innovative, renewable strategies that develop projects and ensure their quality.

4. Implementation of a virtual graphic art exhibition that develops an appropriate proposal for displaying graphic works.
5. Use of virtual platforms for graphic art exhibitions and other displays.

Research aims to

1. Learn about virtual exhibitions, their types, and methods of design.
2. Identifying design thinking, its processes, and areas of use.
3. Designing a virtual art exhibition by applying the design thinking strategy.
4. Implementation of the virtual art exhibition through the application of the design thinking strategy.

Study Terminology

- Virtual Exhibition

Defined in this research as a display space on web pages, in which two-dimensional digital artworks; in a particular style and organization; To achieve a user experience that is fun and attractive.

- Design Thinking

Defined in this research as one of the planning methodologies for designing perception and dealing with data. It relies on the sequential processes of thinking, analyzing information, asking questions, using tools to plan ideas, and finding creative and alternative solutions to achieve success or the project's intended goal.

Research Methodology

This research applied a descriptive approach to describe a phenomenon, collect information about it, classify and organize it, and use it in practice.

Review of the Literature

The research question attempts to answer the relationship between designing virtual exhibitions and design thinking; thus, the study literature is divided into two parts. The first section deals with various virtual exhibitions studies, which explain the employment of virtual exhibitions from several aspects, such as virtual exhibitions of museums during the pandemic, virtual art exhibitions in terms of techniques and dimensions, and virtual art exhibitions in terms of presentation. At the same time, the second section addressed design thinking in terms of its applications as a strategy in the design of virtual exhibitions and applying the design thinking process in projects to solve problems.

Virtual Exhibitions Characteristic

Virtual exhibitions are characterized by several characteristics, mentioned (Khamis, 2015):

1. Virtuality: It resides in a virtual entity on the Internet, whether it simulates an actual exhibition's actual reality or is only a virtual entity.
2. Digitalization: The exhibition is based on digital technologies, whether in construction, exhibits, or touring and interacting.
3. Animation: that is, the exhibition is a three-dimensional virtual environment.

4. Richness and Diversity of Content and Media: It contains rich and varied media to display the exhibits in sound, image, text, and movement.
5. Interactive: it is an environment in which visitors interact with the exhibits and the sensory stimuli that accompany them.
6. Informatics: The virtual exhibition comes as a digital database that provides rich information on the exhibits, which individuals can obtain and share.
7. Global: It is displayed on the Internet, and therefore can be accessed from all over the world.

The History of Design Thinking

Design has gone through stages of intellectual development over time until it is known in our current era as design thinking; In the 1970s, the principle of adopting design as a science appeared, and this trend was known as the science of design. During this stage, the so-called participatory design emerged, which was called the Scandinavian approach. The participatory design originated in Scandinavia in the 1970s and 1980s and integrated end-users into the projects' development (prototyping) phase. From the 1970s to the 1980s, cognitive design thinking developed, a step known as Cognitive Reflection, in which the participatory design method evolved into a user-centered design. By the time, this knowledge extended to the stage of design processing methods, which started from the year 2000. The design uses developed, and several trends emerged, most notably Meta-Design, which continued until the Mental Design stage appeared. Then the Service Design process improved, and this method evolved to focus on design centered on Human-Centered Design (HSD), the last step in which design thought has developed.

Design Thinking Models

1. Stanford D. School Model

The D-School model is the first model of design thinking. The American Professor developed it at Stanford University, David M. Kelley, and it depends on five sequential stages: *Empathy*, *Definition*, *Ideate*, *Prototype*, and finally, the *Testing* stage. This model is more general and applicable, and its phases can be employed in more than one field.

1. IDEO Model:

Tim Brown developed this model in 2001 as a design thinking approach based on a system of spaces rather than an organized series of steps. (Brown, Wyatt, 2010) stated that there are three areas to consider: inspiration, ideation, and implementation. Tim Brown explained in the *Inspiration* space as the problem or opportunity that stimulates the search for solutions. *Ideation* space includes generating, developing, and testing ideas and *Implementation* as the path that leads from the project stage to people's lives. This model can be applied in many areas that require creative solutions.

1. Design Thinking Model for Visual Communication

Gavin Ambrose and Paul Harris analyzed the stages of Design Thinking based on previous models; To be used directly and procedurally in graphic design and visual communication. This model included six phases explained extensively in their book, *Design Thinking for Visual Communication*, and an explanation of what each stage of procedural steps required: *Thinking*, *Research*, *generating ideas*, *Ideate*, *Prototype*, and *Implementation* stage.

Study Procedure

The research relied on the D-School model in designing the virtual exhibition because it is distinguished by comprehensiveness, simplicity, and logical sequence that fits with the project subject of the application. Therefore, this study applied a procedural plan that includes a mind map and a user journey map for the exhibition design.

- **Sympathy:** the sympathy began during the Corona pandemic, with the difficulty of holding actual exhibitions during it, as well as the lack of local art exhibitions specialized in graphics, and with the presence of good graphic works produced by students in computer design courses, so the graphic works were collected, followed up, and evaluated.
- **Definition:** A proposal was developed to design an exhibition to introduce the female student graphic work in an art exhibition. This exhibition includes the outputs of computer design courses in the Art Education Department. The 5 Whys method was used, which is a questioning strategy that helps in brainstorming; This enables the researcher or designer to get to the root of the problem and apply a mind map to the user.
- **Ideate:** in this stage, the general idea of the exhibition is crystallized within several procedures that include convergent thinking, divergent thinking, sorting out proposals, and presentation methods in a comparative and brainstorming approach.
- **Prototype:** the display method was chosen based on the data in the previous stage; Where the display platform was chosen to be a virtual display platform, it includes the following steps:
 1. Determine the platform, which is the website (<https://www.kunstmatrix.com/en>).
 2. Choose a presentation and design method, which includes:
 - Raising the works on the virtual platform and classifying the works by field.
 - Design a visitor's path.
 - Choice of sound effects for each section of the gallery.
- **Test:**
 1. Presenting the final version on the website.
 - Document the students' work in the identification cards and specifying the technology used in graphic work.
 2. Examination of the exhibition by displaying it on several browsers such as Safari and Chrome and some devices with different Mac OS and Android systems.
 3. Address issues related to display, such as business image formats and their compatibility to appear on the platform and browsers.
 4. Modification of the navigation method used in the gallery by allowing the manual option with the automatic.
 5. The launch included the introduction of the exhibition by publishing the link through social media.
 6. Measurement of the impact and reactions by noting the number of visitors and comments on social media and editing articles in local newspapers.

Research Results

After presenting the concepts and models of design thinking and virtual exhibitions, and after determining the appropriate model for the idea and research problem, and after applying it, implementing the exhibition, and monitoring the interaction, the research reached several results:

1. The design thinking strategy helped to display creative solutions to the problems that faced the research problem, which is creating the virtual exhibition on the display platform through the application, study, and review of the stages of design thinking; To reach the final stage of the exhibition.
2. Technology and social media helped support rapid access and sharing of opinions and reactions to virtual exhibitions.
3. Virtual exhibitions support easy access to share virtual presentations for artists, designers, and art lovers in the presence of interactivity.
4. The material cost of creating a virtual exhibition is insignificant compared to the general cost of making a live exhibition. It is a contributing factor to the rapid and easy dissemination and sharing of works by many.

Study Suggestions:

The study suggests expanding and applying the design thinking strategy to create virtual exhibitions. Also, it is essential to teach design thinking strategies in art and design to enrich the Arab researches in this field. Finally, this study recommended creating an Arab interactive virtual exhibition platform concerned with creating and sharing virtual exhibitions locally and in the Arab world to support artists and designers in showcasing their work.

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