Ergonomic and interactive properties in the design of metal display systems

Prof. Saeed Mahmoud
Professor of metal construction & furniture design at the department of metal furniture & construction, faculty of applied arts, Helwan University
Saedfarahat@yahoo.com

Prof. Wael Galil
Professor of ergonomics at the department of metal furniture & construction, faculty of applied arts, Helwan University
Waelgalil@hotmail.com

Assist. Lect. Mohamed Ashraf
Assistant lecturer at the department of metal furniture & construction, faculty of applied arts, Helwan University
Mohamedashraf1991@yahoo.com

Introduction:
Interactive technology has become an integral part of all the different design disciplines, including the design of metal display systems. Interactive technologies have emerged as a result of the great development of information technology and its integration into various fields of design, and products can respond to user expectations quickly and easily and meet their needs and satisfaction.

Interaction is generally defined as a kind of act that occurs between two or more objects on the condition that there is a mutual effect between them. Therefore, the idea of interaction depends primarily on mutual influence as the essential and necessary matter of interaction rather than one-way effect.

Keywords:
Interaction design – metal display units – ergonomic of interactive display unit.

Research problem:
The research problem stems from the need for a scientific study to control the ergonomic properties and interactivity in the design of metal display systems according to the requirements of functional, aesthetic and technical performance.

The research problem can be identified in the following questions:
- How to utilize the ergonomic and interactive properties in the development of advanced and efficient systems for metal display systems?
- How can the use of interactive technology in the design and production of metal display systems to achieve innovative thought and out of the ordinary?

- Objective of research:
The aim of the research is to utilize the ergonomic and interactive properties in the design of metal display systems to achieve functional and aesthetic value.
-Force search:
The use of ergonomics and interactive properties in the design of metal display systems will lead to a new and innovative dimension to the design of these systems and the optimal use to achieve their functional and aesthetic value.

-Research Methodology:
The research uses the descriptive approach.

Axis I: Interactive properties of metal display systems
Interactive technology has become an integral part of all different design disciplines, including the design of metal display systems. Interactive technologies have emerged as a result of the great development of information technology and its integration into various fields of design. Products can respond to user expectations quickly and easily and meet their needs and satisfaction.

1-Interaction design:
Interaction is generally defined as a kind of act that occurs between two or more objects, provided that there is a reciprocal effect between them. Therefore, the idea of interaction depends primarily on mutual influence as the essential and necessary matter of interaction rather than one-way influence. A tool that can achieve specific goals for a particular class of users through a reciprocal relationship between them and the product.

2-Entrances to the design of interactive display systems
The first entrance: (Design of luggage)-
The second entrance: user is the axis of design-
The third portal: (Communicating with the user)-

Axis 2: Argonous characteristics of interactive mineral display systems
Argonomics is the science of labor laws that govern the relationship between people and the tools used to perform the function. Argonomics aims to identify deficiencies in existing systems and avoid them in the future in order to achieve the best performance. Changes based on the Argonomics recommendations are essential to the design of exhibitions and are useful in improving the performance of exhibitors and productivity in general.

Axis III: An applied study for the design of interactive metal display systems:
This theme is concerned with defining the general features of the design of interactive metal display systems and applying these considerations in designing application models for interactive metal display units.

The general features of the design of interactive metal display systems can be illustrated by:
- The design of interactive metal display systems in the modern technical system focuses on the characteristics of the consumer and not on the product and is based on the psychological principle that says emotional attraction followed by mental persuasion is the basis in the process of design of interactive metal display system.
Proposed Design Model:

The first proposal of the proposed design model in the general situation

The second proposal of the proposed design model in the general situation

Research results:
- The design of metal display systems has undergone a tremendous development and change in form and function. It has gone beyond being traditional display systems to being a work of art with many aesthetic and artistic values. The image, movement and different materials were sometimes used to convey ideas and attract audiences. The literature also played a common role alongside design in the visual systems of metal display systems.
- Metal display systems are one of the important areas of application of interactive techniques, which allows the construction of these products from the ability to multi-functional and smooth movement according to mechanisms (Mechanisms) movement that helps to respond effectively to external stimuli.
Search references:
1. Johanna Kelly, Exhibition Design + Contemporary Encounters A project submitted in partial fulfilment of the requirements for the degree of Master of Arts (Interior Design), RMIT University, Australia, 2012.