

## **Ergonomic standards for three dimensional handmade -woven products**

**Assist. Prof. Dr. Abeer Saeed Al- Ghamdi**

**Weaving assistant Professor – Art and Drawing Department - University of Jeddah**

[asalghamdi8@kau.edu.sa](mailto:asalghamdi8@kau.edu.sa)

### **Abstract**

The science of ergonomics is investigated by functional theory, which is the product's conformity to its function, And its suitability with humans. Ergonomics is concerned with solving design problems through proper planning of the workplace, tools and means of operation. This contributes to increased designer efficiency and productivity, and provides convenience and ease of work. To produce fast production rates with less effort and higher efficiency. It is also concerned with the field of security, safety and security to achieve maximum quality in the system of technical specifications and model standards. Stereoscopic handmade tissue is one of the products that has been affected by the standards of ergonomics. Therefore, the research sheds light on activating the role of ergonomics in stereoscopic handmade textile products, in order to achieve comfort, safety, efficiency and quality of the three-dimensional handmade textile products. The research also aims to achieve a symmetrical relationship between ergonomic standards and stereoscopic handmade textile products, and interest in studying the activation of the standards of ergonomics in the field of stereoscopic manual tissue.

The most important results of the research were summarized on the role of ergonomic standards in the field of textile models for developing product specifications and increasing its ability to compete locally and internationally. The focus of light on the application of the ergonomics standards in histological work through the researcher's own experience. It also recommends that the researcher continue research in the science of ergonomics, solve productive problems and prepare for them. Instructing male and female students in the variety and applied arts by applying the criteria of ergonomics in the design and implementation of textile works.

### **Keywords**

(Ergonomic Standards, Products, Holographic Manual Fabric)

### **Introduction**

As a result of scientific and technological progress in the field of plastic arts in the modern and post-modern era, It resulted in new, unconventional visions for the artist to discover new aesthetic shapes and dimensions of the material, methods, techniques, synthesis and mixing between them. To help the artist unleash the thought and search for innovative aesthetic relationships accompanying the era of modernity of thought. Textile art is one of the arts that has evolved in the expressive and aesthetic aspect, and its emergence with contemporary plastic visions linked to art, aesthetic values and modern technology. To achieve woven art works in which it reflects aesthetic and plastic dimensions that attract the viewer, (Abdin 2010, 253). In recent years, the shape and content of woven artwork has changed. The two-dimensional weaving surface has turned into three dimensions and into a fully circular embodiment, so, the hand-woven fabric has various artistic trends. (Isaac 1996, 31).

Now, and with the development of technology, a new science has been explored the relationship between art and technology, arts and people. Human comfort was the main objective besides artistic taste. Among the most important of these sciences is the science of ergonomics to contribute as a main pillar in the plans of development and innovation, and its application in all areas of life to reach the highest human performance in the use of tools and equipment in the work environment to suit the nature of man and his needs. It is also a component of sustainable development. It revealed the relationship between the aesthetic and functional form of the products and the ergonomic criteria and the extent of their influence on increasing the demand for the product and raising its competitiveness. (Al-Hibri 2016, 169-170)

In the field of weaving in general and stereoscopic weaving in particular, the researcher believes that there is a great importance for using the ergonomics standards in its design and implementation, and this is what the current research deals with.

### **Research problem:**

The research problem is determined in the following question:

- How can ergonomic standards be implemented in the field of stereo hand weaving to achieve comfort, safety, efficiency and quality?

### **Research imposition:**

The activation of the ergonomic standards in the stereoscopic weaving product supports efficiency, quality and safety factors.

### **Research aims:**

- 1- Achieving the equal relationship between ergonomic standards and stereoscopic handmade weaving products.
- 2- Activating the standards of ergonomics to achieve comfort, safety and quality in the field of stereoscopic hand weaving.

### **Research importance:**

- 1- Enhancing the developmental capabilities of hand weaving designers in the field of ergonomics to design and develop holographic hand-woven products.
- 2- Attention to achieving ergonomic standards in the field of hand weaving to increase its ability to compete locally and globally.

### **Research methodology: theoretical framework**

The research deals with three axes, as follows:

- The first axis deals with the concept of ergonomics and its importance in product design and development processes.
- The second axis deals with the definition and types of stereoscopic hand weaving.
- The third axis deals with the criteria of ergonomics in hand weaving.

### **Practical framework:**

The descriptive analytical method follows the works of stereoscopic weaving artists and the extent of application of ergonomic criteria. The research also follows the experimental approach through the researcher's practical experience.

The researcher has been interested in the implementation of the technically and technologically woven art in terms of internal and external space and the three-dimensional stereoscopic weaving form, the emergence of animated weaving work with multiple levels of stereoscopic formation with more than one design and more movement, which is seen in more than one angle, and activation of all parts of the technical work through dynamics Formality and formality, and by the end of the work the third dimension and embodiment were achieved with an integrated vision of weaving work in terms of balance between form and space, to enrich the vision of the woven form with distinct thought and performance.

### The applied experience of the researcher



**Results:**

1. The application of ergonomics standards in the field of stereoscopic hand weaving helped to develop specifications for the product and increase the level of comfort and safety, and its ability to compete locally and globally.
2. Ergonomic standards helped solve problems and avoid errors in the histological process through what the research presented.
3. Practical experience has proven that the stereoscopic weaving has the richness and innovation with its formative capabilities and endless designs. With a range of different ergonomic standards.
4. The researcher concluded that there is an association between aesthetic and functional appearance and with ergonomic standards, and can be used to develop and raise the quality and efficiency of textile products.

**Recommendations:**

1. The research recommends paying attention to modern ergonomics in textile art, and its scientific and technical investment in the field of design and arts for the purpose of continuous development of its teaching methods.
2. Directing male and female students in the fine and applied arts, to apply the criteria of ergonomics in designing and implementing stereotypical weaving works.
3. The researcher recommends paying attention to designing tools, weaving looms and working environments (weaving laboratories) according to the rules of the ergonomics standards in order to ensure a safer, more comfortable and effective use.
4. Observing ergonomic criteria when designing or developing the product to reach more efficient products and compatibility with the user, which increases its competitiveness.

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