

## **The Role of Interactive Design in Achieving Sustainability**

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### **• Abstract**

Given the great problems that have occurred to the environment as a result of the tremendous technological progress in our daily life that has caused many environmental problems

This has led to the emergence of sustainable development in an attempt to preserve the environment and its resources, which are diminishing day by day

And as a result of the emergence of sustainability and the development of interactive design in the lives of designers, and in the belief in the role of the industrial designer, it was necessary to use and benefit from the industrial designer in achieving sustainability.

This came in how to take advantage of interactive design in achieving sustainability...

The research begins with studying everything related to effective design, including concepts, objectives, definitions, trends, and then extrapolating all aspects of interactive design.

Then comes the study of sustainability, its themes and concepts, and how to achieve it.

Then comes the main research point in reaching the common point between interactive design and sustainability to know the role of interactive design in achieving sustainability and create a scenario with the most important studies that we have come up with to achieve this role, and then a questionnaire was made to reach the extent of this study that works to derive the basic components. That can be followed in achieving sustainability through interactive design> The research problem is about studying both interactive design and sustainability and how to achieve sustainability through interactive design by improving user behavior and influencing it to achieve sustainable behavior. And how to benefit from the design of interactive systems. Found in interactive design to achieve sustainable behavior while important

When there is a relationship that proves that interactive design has a role in achieving sustainability, it can open horizons for the industrial designer to practice his design innovations while taking into account the environment and ensuring the continuity of environmental consumption and preserving the environmental resources significantly.

### **• keywords**

interaction design , ,sustainability HCI.

### **1. Introduction:**

Preserving the environment is one of the most important things that must be adhered to, whether at the level of the individual or at the level of society, especially since the environment is everything that surrounds man, including plants, animals, and inanimate objects, so that man

himself is one of the elements of the environment, and all of these elements are of great importance and directly affect people's lives. For this reason, preserving the environment is an urgent necessity that should never be tolerated, because any breach in any of its elements causes many negative damages to humans and devastating environmental disasters that make the planet an unsafe place to live. The importance of preserving the environment emerges nowadays more than ever Especially in light of the significant increase in the number and diversity of pollutants due to the great development in industries, construction, transportation sectors, fuel manufacturing, electricity production and other reasons that increase the production of materials harmful to the environment, and among the most prominent pollutants that cause the destruction of the elements of the environment: toxic gases and fumes resulting from factories, means of transportation and devices The various types of ozone hole widening and the infiltration of a large amount of harmful ultraviolet rays, as well as the phenomenon of acid rain and the phenomenon of Global warming, sewage water that pollutes water bodies and plants, chemical and organic fertilizers that pollute the soil and change its properties, and other pollutants. ( )

Hence the concern for the environment and a global trend towards environmental sustainability, which is “sustainable development is development that meets the needs of the present time without compromising the ability of future generations to meet their own needs.”

Believing in the role of the designer in the preservation of the environment, the exploration of sustainability in design began around 1995 when Victor began to consider the critical issues that sustainability brought to design practice, considering the identification of environmental concerns as a responsibility that the designer must assume. ( )

But with the spread of interactive design between human and computer, as it plays a critical role at the present time due to the development of technology devices and the inherent user relationship with the product or devices. When talking about the power of technology, we find that technology has the ability to normalize, manage and shape individuals, control daily practices, and regulate our actions. in behaviour. Therefore, it was necessary to find solutions to preserve the environment through our use of these interactive products that are widespread in our daily lives.

## **2. Objective of the study:**

The research aims to study both sustainability and interactive design and provide the relationship between both of them to reach how to achieve sustainability and preserve the environment and to clarify the extent of the role and involvement of the user in the design process. And how to achieve this through interactive design.

And setting considerations for the industrial designer to achieve sustainable behavior and preserve the environment.

## **3. Research topic:**

People don't have a pollution problem but a design problem. If humans were to design products, tools, furniture, homes, factories, and cities smarter from the start, they wouldn't even need to think about waste, pollution, or scarcity.

Good design allows for abundance, endless reuse and pleasure. Hence the role of the designer in preserving the environment, as this research aims to explore the main factors that designers

must consider when designing techniques to improve environmentally sustainable behavior in light of interactive design and how to use interactive design to achieve sustainability.

The research begins with a study of everything related to interactive design and then studies sustainability in a highly interpretive manner. It also mentions the most pressing issues within environmental sustainability.

Since there is a broad approach between (HCI) and sustainability in a way that benefits both directions, and in my role as a designer, I believe that sustainability should be a central focus in interactive design and should be applied.

#### **4. Significance of the study**

When there is a relationship that proves that interactive design has a role in achieving sustainability, it can open up horizons for the industrial designer to practice his design creativity with consideration for the environment and to ensure the continuity of environmental consumption and the preservation of environmental resources greatly.

#### **5. Problem of the study**

The research problem revolves around the study of both interactive design and sustainability and how to achieve sustainability through interactive design by improving user behavior and influencing it to achieve sustainable behavior.

#### **6. Methodology of the study:**

The quantitative approach was used in this stage, as this stage included the design, development, management and analysis of a questionnaire via the Internet.

#### **Conclusion :**

Our study focused on the key factors that should be considered in interactive design products to improve people's environmentally sustainable behavior by integrating Fogg behavior model factors for motivation and ability and adding an additional factor to the emotionality of the design. As our results show, the application of these factors had a positive effect on the overall success of the application. Especially the additional factor of the emotional relationship received very positive responses from the participants and helped the scenario for our application to reach good results. M indicates the possibility of achieving or preserving the environment by directing user behavior using human-computer interaction.

#### **Research Results :**

- o Achieving the goals and principles of interactive design and interactive products is one of the most important ways to achieve sustainability when making a product that achieves sustainable behavior
- o The questionnaire points came to prove that when user behavior directive factors are introduced into interactive systems, they work to create sustainable behavior, which in turn may work to achieve sustainability.
- o The industrial designer has an active role in society, and through this research, an important role has also been added to achieve environmental sustainability through his products.

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