

# **Study and analysis of design strategy and lateral thinking techniques to form a new design strategy supported by Lateral Thinking**

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## **Abstract**

Creative thinking is an open thinking that comes out of the usual sequence to be a diversified thinking that leads to the generation of more than one answer to the problem. It is defined as the mental process that we use to reach new ideas and visions, or that leads to amalgamation and harmony between ideas or things that were previously considered unrelated. Creativity is a blessing from God Almighty bestowed upon man, and that every person is in need of it; Because creativity makes human life more enjoyable, more entertaining, and more developed, and it is the basic tool that each one of us needs to achieve in order to get what we want with all its diversity, and to produce new, unfamiliar ideas that are characterized by originality. Creativity is not limited to a specific art or activity, it includes all types of arts, literature, sciences, various works, and so on. It is not limited to a group or an individual, creativity is the highest level of human cognitive activity and the most important educational outcome, as it represents a means of self-expression, and when subjected to evaluation, it urges the individual to produce something new or different and at the same time carries the character of the individual that distinguishes him from others. Lateral thinking methods contribute to developing the designer's ability to deal with challenges and life situations in a more creative way. It gives him the power to produce original and unique ideas, so the research deals with how to take advantage of lateral thinking methods in support of the industrial design strategy and reach a new strategy supported by lateral thinking methods, in an effort to generalize and consolidate the concept and practice of lateral thinking among students and practitioners of industrial design to reach designs characterized by creativity. By studying creativity and presenting its concepts and characteristics, the research also presented the concept of creative thinking and lateral thinking, and then presented the design strategy and schemes for explaining lateral thinking methods and analysing them to determine points of compatibility and then developing a new design strategy supported by lateral thinking methods.

### **Research problem**

There is no clear design methodology that enables the industrial designer to use lateral thinking methods systematically to achieve creativity in our designs.

### **Research objective**

The research aims to support the design strategy using lateral thinking methods so that the designer can use them systematically, in an effort to generalize and consolidate the concept and

practice of lateral thinking among students and practitioners of industrial design to reach designs characterized by creativity.

Research importance

The importance of the research is due to the fact that creativity is closely related to the design process, design in its essence must express thought and creativity, and the effort expended and insistence on taking it out in a way that does not accept repetition or stereotype to write for it success and continuity.

Research Hypothesis

If the design strategy is supported using lateral thinking methods, the industrial designer will be able to use the methods in an easy, systematic and thoughtful manner, which will inevitably lead to a significant development in the design process and access to creativity in our designs.

Research Methodology

The research follows the deductive methodology.

Research key words

- Creativity
- Creative thinking
- Industrial design
- Design Strategy
- Lateral Thinking

## Introduction:

The industrial designer bears the task of creating, designing and developing products, with the help of tools and methods of design (drawing, presentation and modeling techniques), which makes him always looking to develop his tools, activate and enrich his creative abilities, which gives importance to scientific support for the industrial designer, by adding methods that will support creativity in the industrial design process, which is needed by the industrial designer when he joins the labor market in productive institutions. Ability, efficiency and creativity in generating ideas. These methods have proven effective in working through years of use with different people in different cultures. <sup>(1)</sup>

## First: Creativity

Creativity is the process that lies behind every progress reached by human groups, and it is also one of those processes that distinguish man from the rest of the creatures within the limits of what we know, as the existence of man is linked to that ability of society and its progress bearing many difficulties and hardships<sup>(2)</sup>.

### (1) Definition of creativity

Creativity is a very complex phenomenon with multiple and varied faces and dimensions. Research in the field of creativity has proceeded on a broad front full of bifurcation and diversity. Sometimes new dimensions appear and once again they come to replace them, but they are more novel. Psychologists have differed in their definition of creativity and this difference comes through the theoretical frameworks to which they belong and proceed from them to root creative thought.

## (2) Creative thinking

It is an open thinking that emerges from the usual sequence until it is a diversified thinking that leads to the generation of more than one answer to the problem. In this sense, this does not depart from the previous concept of creativity, but the difference is that creativity represents the product or fruit of creative thinking, while the method used in thinking is known as creative thinking<sup>٧</sup>.

### Second: lateral thinking

Lateral thinking is now taking a systematic entry in the OXFORD ENGLISH DICTIONARY, which is the arbiter of the English language. And its meaning came in the entry of the Oxford Concise DICTIONARY: Search to solve problems by unconventional or clearly illogical methods. The important word is (clarity). Methods appear (illogical) in the term of ordinary logic but are derived from (forming) logic where excitement is considered necessary.

### Third: Product Design Strategy

#### (1) Design strategy (design process)<sup>(٨)</sup>

It can be seen as the basic tool or backbone of design activity, as it shows the designer the organized method that he must follow to reach the final design. The following is a presentation of the stages followed (the design program) in the design process, as lateral thinking methods are applied through this program, specifically in the stage of developing ideas, which is the fourth stage of the design program, and the stages of the design program are :

- 1- The stage of visualization and defining the problem
- 2- The stage of collecting and analyzing information
- 3- The stage of developing design requirements and specifications
- 4- The design stage (developing ideas)

The designer sets a set of different design trends and has to suggest one of the directions that most fulfils the design requirements. The designer also works on developing many diverse ideas and uses the method of induction at this stage to reach ideas characterized by creativity. After extracting many new and good ideas for the product, the designer evaluates them to choose the best ideas to move to the next stage, which is the presentation.

### Fourth: Supporting the product design strategy using lateral thinking methods:

#### (1) Analysis of design strategy and lateral thinking methods:

In this part, the first four stages of the design strategy and the five lateral thinking methods are analyzed in tables containing the following points:

- Target
- How
- Importance
- Abstract of the analysis for each row in clear, brief points: In this part, four colors (orange - green - blue - yellow) will be used to identify all two compatible points with the same color, for ease of reading and understanding the tables.

## (2) Analysis result:

It became clear to us from the analysis tables that there is a clear agreement between the lateral thinking methods and the design stages.

## (3) Supporting the design strategy:

After addressing and defining the product design strategy, as well as displaying lateral thinking methods schemes, and analyzing both to reach points of compatibility and the quality of tools that should be used in each of the different design stages, the new design strategy supported by the five lateral thinking methods will be presented, which aims to achieve creativity in design and developing ideas and solutions that both the industrial designer and the industrial organization aspire to.

In this part, the new design strategy will be presented in the form of specific points to make it easier for the designer to read and apply it.

**1- The stage of visualization and identification of the problem/product:**

A-Defining the problem or product to be designed and developed.

B-Determining the reason for this design if it is a new product or the reason for development, and the motive behind this development.

C-Applying the concept fan diagram to the previous two points to obtain several options for solving the problem or developing a new product.

**2- The stage of data collection and analysis:**

A-Make an introduction that includes the definition of the product and the history of the product.

B-Conducting market research and gathering information on competing products.

C-Conducting market research and collecting information on similar products as a means of random entry.

D-Conducting qualitative research (ethnography), which includes observing consumers and conducting interviews with them.

E-Conducting quantitative research, which includes conducting opinion polls to find out consumers' desires and extracting the output in the form of percentages.

F-Make an inspiration board containing different pictures of products, things, animals or plants to be used as a random entry.

**3- The stage of setting design requirements and specifications:**

A-Setting requirements and specifications based on the previous study.

B-Challenge the specified product specifications.

C-Conducting a comparative analysis with market products.

**4- Design stage (idea development):**

A-Using the methods of Provocation and movement to generate creative ideas for the new product.

B-Starting to develop design ideas after choosing one of the ideas that was generated from the incitement.

C-Choosing a design from one of the design ideas and working on developing it using 3D design programs using the computer.

D-Preparing the final output images to present and explain the design idea.

**Fifth: Search results:**

- (1) Shedding light on the relationship between design, creativity and lateral thinking methods.
- (2) Revealing the existence of points of agreement between the lateral thinking methods and the stages of the design strategy.
- (3) Reaching a new design strategy supported by lateral thinking methods.

**Sixth: Recommendations:**

- (1) The necessity of supporting design curricula with a design strategy supported by lateral thinking methods and training industrial design students on it.
- (2) Take advantage of lateral thinking methods to design a group of original and unique products that achieve competition.
- (3) The necessity of training industrial designers to use lateral thinking methods, by holding training courses for them. Encouraging them to use these methods in designing unique and creative products.

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