

## **The Impact of Concept Maps as a Cognitive Representation Tool on Supporting Thinking Skills of Contemporary Designer.**

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### **Abstract:**

The research problem can be summarized in that the continuous and rapid informational change that characterizes the post-information/post-knowledge era has made it difficult for the contemporary designer's mind to confront the extreme complexity that has become the dominant feature of the current stage. Since the renewal of the tools by which thought creates, knowledge is organically linked to the opposite aspect, that is, the way knowledge creates thought. Therefore, it has become one of the necessities for the formation of the contemporary designer to know how to integrate the multiple types of knowledge that make up his intellectual fabric and the ways to represent them cognitively in a way that Prevents information confusion and ensures the completion of the design process in a satisfactory manner.

So, the research aimed to study and analyze the concept and role of modern cognitive representation in terms of its relationship to the field of design, and to monitor the extent to which the designer's intellectual skills are affected by one of the mechanisms for representing contemporary cognitive variables, which are concept maps in their linear and digital forms.

To achieve the aims, the researchers followed the descriptive analytical approach in studying the axes: cognitive representation, concept maps, design thinking skills; and then the experimental approach in studying the digital applications of concept maps in the fields of contemporary design.

Thus, the research discussed three axes: First: Cognitive representation, in terms of the basic concepts of cognitive psychology and its relationship to design perception and how the designer recalls the design cognitive structure in memory and then how the mind employs these structures to help solve the design problem. This axis also reviewed cognitive thinking skills and their relationship to cognitive schemas in the field of design thinking. Second: Concept maps, In terms of its definition, origin, development, purpose of use, and importance in the field of design, and then its patterns and compositional structure. Third: Digital mind maps, this is in terms of the concept, available applications and features, and then how the researchers created an application model that represents a digital mind map for designing a metal/ceramic industrial product.

### **Keywords:**

Cognitive representation, concept maps, digital mind maps, design thinking

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