

## Emphasizing the Identity by Integrating the Cultural Dimension in the Design Aiding Tools

### “Paradigm on the Design Tools of Islamic Geometric Patterns”

Associ. Prof. Dr. Hesham T. Eissa

Associate Professor, Dept. of Architecture, Delta Higher Institute for Engineering &  
Technology, Mansoura, Egypt

[hesheissa@gmail.com](mailto:hesheissa@gmail.com)

#### Abstract

The aiding tools for design started as early as art creation and have evolved over time since then. These tools played a very important role to mediate between theory and practice in design; It also aims to facilitate the artisan's work to create sophisticated art that usually conveys messages and meanings drawn from a specific culture. Tracking the evolution of the design aiding tools would help to establish a generic model that would facilitate tools development through a clear methodology.

The Islamic geometric patterns are proper paradigm to use in reaching this development as it constitutes a mathematical challenge that needs aiding tools to simplify the process of producing such art.

Several studies have been conducted in order to investigate the construction techniques of Islamic patterns; even though, those studies focused on the mathematical analysis of the patterns form rather than the applied construction techniques used by the artisans, which are believed to be varied according to cultural background. The Islamic geometric patterns found to have common features that make such pattern easily recognizable; even though, they have variations resulted from cultural background for each region. Therefore, the compensation is needed between **commonality and variation** in the same time. The cultural variation is the absent dimension in methods and tools used to create Geometric Islamic pattern. By integrating **what is missing** (culture dimension in our case) into the aiding tools and affords it to designers and artisans will help in creating significant art with **specific identity**.

#### Keywords:

Islamic Geometric Pattern; From Theory to Practices in Design; Mediating Tools Aiding design; Cultural DNA; Shape Grammar.