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Visual Intelligence and the Concept of Geometric Abstraction in Architecture Students

Ruta Vanaga*

Department of Civil Engineering, Institute of Energy Systems and Environment, Riga Technical University, USA Technical University, USA

Letter

In architectural education, the building shape includes aspects such as function, form, technology, culture, artificial and natural environments. Geometry is used to describe design as a result of digesting these facts in layers of knowledge. During this era of shaping, two-dimensional geometry (Thales) learned in middle school is insufficient; a set of skills including basic three-dimensional (Platon), curvilinear geometry (Desargues), and the stages of adding, subtracting, and deforming geometric forms is required.

On the other hand, during the composition stage, in addition to geometric knowledge for expression, it is required to build meaningful relationships among shapes. It is vital to provide information regarding the development of the student's visual intelligence at this stage [1].

In human life, sight and attribution of meaning comes before talking, according to Berger (1999). Arnheim contends that perceptual psychology creates a strong link between science and art, as a continuation of Gestald's theorem [2].

Visual communication is seen to be more powerful than other forms of communication in this situation. In light of this finding, it is now common to observe exams and strategies for developing visual intelligence during intelligence education. The fundamental purpose of these strategies is to discover the relationship between forms, distinguishing the primer principle from others and bringing it to the forefront. We may argue that the guidelines established by Gestald theory – with the goal of establishing psychological principles of visual perception – are still in use today find a home in two- and three-dimensional expressive domains such as visual communication, visual arts, and architecture. The concept of "abstraction" is used in art, which is in line with Gestald philosophy. "Abstraction" can be described as the conceptual expression of a thought with the fewest instruments possible. In the visual arts, geometric abstraction in painting can be used to demonstrate the concept of abstraction [3,4].

Both two and three dimensional com position outputs are desired in architectural design education. Deductively, the supportive intermediary study, which tries to disassemble and abstract sample buildings, is tried with the goal of increasing visual intelligence in this inductive education paradigm.

For abstract ion, the students were given a model building that ranged from simple to complicated. First-year students were given building samples that were aligned beginning with primary forms and continuing with derived-composite forms in order to understand the geometric forms of architectural constructs. They were then asked to draw the basic primary forms of the buildings near each building by following the contours of the buildings, whereas in deformed shapes the primer form and its transformation were shown expected. Buildings with basic forms such as cube, prism, cone, and dome were easily drawn in this education model based on deductive analysis; however, they were unable to solve the design logic of deformed forms (twisted cylinder, composite forms from which a piece is extracted or to which a piece is added). When senior class students were given the identical task, it was discovered that their visual intelligence and capacity to abstract had grown slightly; but, in the absence of appropriate geometry classes, the ability to abstract was determined to be insufficient.

In architectural education, the goal is to construct a two-dimensional or three-dimensional composition. Despite the fact that varied information is applied throughout this time, the result is evaluated using geometrical knowledge. Throughout the educational period, "visual intelligence" and "geometric abstraction" to support it have grown in prominence and are now becoming to be the primary approach of design instruction [5].

The knowledge of middle school geometry is insufficient for design students. It is concluded that Euclid, Platon, and Desargues geometry studies should be taught in tandem with design education. Another result is that in design education, it is more productive to study with primer forms in the early years of education, and as geometric knowledge grows, distorted –composite forms become more important.

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Conflicts of Interest

The author has no known conflicts of interested associated with this paper

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***Corresponding author:** Ruta Vanaga, Department of Civil Engineering, Institute of Energy Systems and Environment, Riga Technical University, USA, Tel: +371-67089908; E-mail: rutavanaga@gmail.com

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