HISTORICAL AND SCIENTIFIC BASIS OF INTEGRATION OF PERSPECTIVE SCIENCE AND FINE ART

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ABSTRACT

This article discusses the historical sources on the interdependence and integration of perspective and fine arts, as well as its scientific basis.

Keywords. Perspective, perspective image, integration, geometric shape, geometric object, descriptive geometry.

When teaching any science, we have to integrate it with other sciences. Because if we look at all sciences development history, each of them did not appear at once, independently of nature.One science was followed by another new science, a direction.For example, in the early days, people used different images and shapes to exchange information with each other, and later writing and drawings appeared.

Nowadays, there is integration between interdisciplinary topics and interdisciplinary integration, as noted in pedagogy. Each science-related material content will be linked to a topic in another science. For example, in the drawing, the topic of "Performance geometric shapes and views of objects" is related to the topic of "Properties of flat shapes" and "Formation and types of geometric surfaces" in geometry.This topic is also directly related to the topic of "Drawing geometric objects" in the fine arts. Hence, there is an opportunity to expand and strengthen students' knowledge through the use of information in a subject. However, this information should not be in a position to deny or refute each other.

Perspective image construction is performed based on the central projection method, adapted to the visual characteristics of the person. The central projection method is taught in descriptive geometry. [3]

In this sense, the sciences of perspective and the fine arts are also historically closely intertwined, and we can learn this from historical data. Leonardo da Vinci (1452-1519), a brilliant representative of the Renaissance, developed it with his own unique, very new ideas, assimilating all the information formed about the perspective. He demonstrated the initial laws of linear and aerial perspectives and found that the edges distance of the object relative to the observer caused them to appear blurred. This great figure wrote in one of his works, "Perspective is the steering wheel of fine art." [1]

Russian artists of the XVII-XVIII centuries mastered the perspective theory and used it effectively. The first Russian professor of the Academy of Artists, A.P. Losenko (1737-1773), required his students to know human anatomy and perspective.Well-known Russian artist A.G. Vinetsianov (1780-1847) noted that without scientific knowledge and the laws of perspective, the artist can not create a valuable work.

Russian pedagogue-painter N.N.Ge (1831-1894) wrote that perspective is inseparable from painting, that every artist should know it, not to draw the picture first and then correct it with the rule of perspective, and that perspective will be a guiding star in the work of artists.[4]

From the above data, it can be seen that the attitude of artists to the science of perspective was very positive. Even in the process of drawing, it is recognized that improper application of the rules of perspective image construction can lead to the work not being convincing and natural. So it is natural that the fine arts and perspective are intertwined. Related issues are discussed below.

We use various methods for long-term preservation in memory of images of objects around us. The most effective method is to represent objects in perspective on a plane. Since the creation of a perspective image

of objects allows a comprehensive analysis of the elements of the object, as well as a conscious understanding of the spatial form of the object. [5]

Explains the laws that objects around a perspective can have different appearances and shapes depending on how far and in what position they are relative to the observer's eye. At the same time, it helps to reflect a three-dimensional image of an arbitrary object very clearly on a two-dimensional surface, along with all the changes associated with the distance and position in space that separate it from the drawer.

An artist who is well versed in the laws of perspective can easily perceive the difference between extremely different forms, depending on the position and distance of objects that are good to him from the outside in relation to the observer. [2] When drawing from nature, it helps the artist to know the practical methods of perspective. With this knowledge, he can always check the similarities between the picture he draws and nature. In drawings drawn from memory and in creative compositions that are not based on the observation of relevant real objects, the artist can go one of two ways. He imagines the size of the object, its spatial position, and how far the object is located.

In this case, he can immediately sketch out perspective images of the objects needed for his composition. Here we show other practical methods that help to check self-drawings without thinking (without considering) the laws of perspective, which have been thoroughly mastered. This investigation is called the opposite perspective. It requires great knowledge and skills from the artist, because the images obtained with his help must meet the following conditions, that is, be clear and as close as possible to the previous, first sketches, in which the artist revived his compositional ideas. In addition, the mechanical application of superficially studied perspective rules when making corrections to a compositional sketch can only cause harm. In the above, the goals we pursue through our work become clear. At the same time, in order to reduce the perspective of the subject in space to the artist and to facilitate the understanding of the various forms of distorted views, the issues of perspective structures are first described in theory. Then, the same issues were solved using practical methods without the use of a structure that went beyond the boundaries of the image.

This style is very useful for artists when working in a workshop. For many of these practical constructions, we used the frontal square and the perspective of the circle drawn into that square, realizing that we could easily construct such images in any corner of the picture. From our daily experience, we can say that we perceive the external world in a way that does not resemble its true colors and shapes. For example, the square sides of a cube appear to us to be trapezoidal or irregularly rectangular, while the straight circle of the plate appears to be an ellipse. As for the colors, the hills covered with green grass turn blue from a distance, and the sharp edges of the mountain peaks gradually turn into a transparent vapor as they move away.

The form we perceive through the eyes of the objects around us will also change according to the conditions we have considered below.

1. Objects that are in the same direction and have the same size, but at different distances from the observer, appear larger or smaller depending on how far they go.

Objects that amaze with its grandeur at close range seem much smaller from a long distance.

2. We also see different things that are in the same direction and at the same distance from us. It depends on what place they occupy in our field of vision, i.e., are we looking at these objects from above, from below, or is it standing on us? Maybe he's on the left, maybe on the right. The jaw of the head above the horizon line appears larger, while the forehead of the head below.

3. An object that is always in the same direction, at the same distance from our eyes, changes its appearance depending on how it is positioned in space relative to the direction of our gaze. No matter how

complex the shape of the object, it can always be inserted into a shape that is easier to fit, such as a straight prism with a rectangular base.

It follows that objects in our field of vision vary infinitely depending on their position in space.

In addition, their colors and clarity also vary depending on the navel of the air layer between the artist's eyes and the objects he is painting. As the distance, intensity, and the light change direction with the amount of air, their shadows clarity and the their colors brightness also change. Distant objects appear in lighter colors. If they are drawn too clearly and brightly, their distance will go unnoticed.

Science, generally called perspective, studies the laws that determine the appearance, color, and shadow interaction and objects light in space. It illuminates an object in three-dimensional space without any changes in two-dimensional space. So the perspective science, the perspective image building rules, is an aid to the young artist who is learning to draw, and for the professional artist, a means of verification in ensuring his work vitality. It shows fine art and perspective interplay.

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