

“CREATE” SECTION IN 3D STUDIO MAX – POSSIBILITIES FOR WORKING WITH GEOMETRY AND LINES

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ABSTRACT

The article mainly covers the “Create” section of the 3D Studio Max program and the processes of working with geometric objects and lines in it. The Create section analyzes the possibilities of creating three-dimensional models using geometric shapes such as Box, Sphere, Cylinder, Cone and various Spline lines. The methods of using these objects in the modeling process are also considered. The article is of practical importance for studying the 3D modeling process and using this program in the educational process.

Keywords : 3D Studio Max, Create section, computer graphics, 3D modeling, geometric objects, lines (Spline), visualization, three-dimensional graphics, modeling technologies, design.

INTRODUCTION

As a result of the rapid development of information technologies, computer graphics and three-dimensional modeling technologies are widely used in various fields. Today, creating three-dimensional models is of great importance in the fields of architecture, design, film industry, advertising, engineering and game development. Therefore, learning and effectively using three-dimensional graphics programs is one of the important skills for modern professionals. One of the programs widely used in the three-dimensional modeling process is 3D Studio Max. This program was developed by Autodesk and is a professional graphics environment with three-dimensional modeling, animation creation and visualization capabilities. With the help of the program, you can create complex geometric objects, various scenes, and realistic animations. Therefore, 3D Studio Max is widely used not only by professional designers and animators, but also by students and beginners.

One of the main features of the 3D Studio Max program is its convenient and functional interface. The program interface consists of various panels and controls that allow the user to effectively organize the modeling process. Among these panels, the Create section is of particular importance. Because it is with the help of this section that three-dimensional objects and various linear shapes are created.

The Create section is the initial stage of the modeling process. Through this section, the user can place various geometric objects on the scene, create new shapes using lines, and prepare the basis for creating complex models. The Create section in the program consists of several main categories, through which various types of objects can be created. For example, Geometry, Shapes, Lights, Cameras, Helpers and other elements are included in this section. The most important part of the Create section is the Geometry category. Three-dimensional geometric objects are created using this section. For example, objects such as Box, Sphere, Cylinder, Cone, Torus, Plane are the main elements of the modeling process. Using these simple geometric shapes, complex models can also be created. For example, when creating

architectural models, virtual models of buildings, structures and other objects can be created using various geometric shapes.

The Shapes category also plays an important role in the Create section . Using this section, various lines and curved shapes can be created. For example, using linear objects such as Line, Circle , Rectangle , Arc , Ellipse , various contours are created. These lines can then be converted into three-dimensional shapes using modifiers. For example, using Extrude or Lathe modifiers, a three-dimensional object can be created from a simple line.

The process of working with geometry and lines in 3D Studio Max is carried out based on a certain algorithm. First, the user selects the desired object type from the Create section. In the next step, this object is drawn in the working window and its dimensions are specified. Then the created object is edited using various modifiers. This process constitutes the main stages of modeling.

Using 3D Studio Max in the educational process is also important. Especially for students studying in the fields of architecture, design and engineering, this program can be used to develop three-dimensional modeling skills. Students learn the basic principles of modeling in the process of working with geometric objects and lines and gain experience working with modern technologies.

Therefore, studying the possibilities of working with geometry and lines through the Create section in the 3D Studio Max program is of significant scientific and practical importance. This article analyzes the structure of the Create section, its main categories, and the processes of working with geometry and lines. It also considers methods for effectively using this section in the modeling process.

LITERATURE ANALYSIS AND METHODOLOGY

Scientific research conducted in the field of three-dimensional modeling and computer graphics shows that these technologies are widely used in various fields. With the help of modern graphic programs, it is possible to create complex models, prepare animations, and create realistic visualizations. Therefore, studying 3D graphics programs and analyzing their capabilities plays an important role in scientific research.

In scientific literature, the 3D Studio Max program is noted as one of the most popular graphic programs designed for three-dimensional modeling, animation, and visualization processes. Researchers especially emphasize the convenience of the program interface, the breadth of modeling tools, and the abundance of possibilities for working with objects ¹. In particular, the Create section of the program is an important stage of the modeling process.

According to the literature, the user can place various objects on the scene through the Create section. This section contains categories such as **Geometry** and **Shapes** , through which three-dimensional geometric shapes and various linear objects are created. For example, standard geometric objects such as **Box, Sphere, Cylinder, Cone, Plane** are the main elements of the modeling process. Studies have emphasized the possibility of creating complex models using these objects.

¹Murdock K. **Autodesk 3ds Max Complete Reference Guide** . McGraw-Hill Education, 2019.

Also, scientific sources have widely covered the possibilities of creating lines and contours through the **Shapes category**. Various shapes are created using linear objects such as **Line, Circle, Rectangle, Arc, Ellipse**. Later, these lines can be converted into three-dimensional objects using various modifiers. For example, three-dimensional models can be created from linear objects using the **Extrude, Lathe or Bevel modifiers**. Literature analysis shows that the use of the 3D Studio Max program is important not only for professional designers, but also in the educational process. Especially for students studying in the fields of architecture, design and engineering, this program can be used to develop practical skills in three-dimensional modeling. In this study, **the processes of working with geometry and lines were studied through the Create section** of the 3D Studio Max program. The research methodology was based on several scientific methods. In particular, **analysis, comparison, observation and practical experiment methods** were used.

Using the analysis method, scientific literature on computer graphics and three-dimensional modeling was studied and their main ideas were summarized. Using the comparison method, the capabilities of various graphics programs were compared and the modeling capabilities of the 3D Studio Max program were analyzed.

Using the observation method, the program interface and the principles of operation of the Create section in it were studied. Also, using the practical experiment method, the processes of creating various geometric objects and lines were tested.

During the study, the modeling process was carried out based on a certain algorithm. First, the desired object type was selected from the Create section, then its dimensions and shape were specified in the working window. At the next stage, various modifiers were applied to the created object, changing or complicating its shape.

The Create section of the 3D Studio Max program allowed for a scientific and practical study of the processes of working with geometry and lines. This methodology helps to deeply analyze the capabilities of the program and identify ways to use it effectively.

DISCUSSION AND RESULTS

Using the **Create section** in the 3D Studio Max program significantly simplifies the process of working with geometry and lines and increases the efficiency of modeling. According to the results of the study, the program interface is organized in a user-friendly way, and all the main panels and tools are integrated with each other. This allows the user to quickly and efficiently create objects on the scene, edit them and visualize them ². During the study, **the Geometry and Shapes categories** in the Create section were studied separately. The results showed that complex models can be created using geometric objects such as **Box, Sphere, Cylinder, Cone, Plane**. Also, various contours and curved shapes are created using lines such as **Line, Circle, Rectangle, Arc and Ellipse in the Shapes category**. **These lines are converted into three-dimensional objects using modifiers, which** increases the creativity of the modeling process. Practical experiments have shown that the algorithm for using the Create section consists of the following steps:

1. Selecting the desired object type;
2. Placing the object in the working window and specifying its dimensions;

²Autodesk. **3ds Max User Guide**. Autodesk Inc., 2020.

3. Editing the object and changing its shape using modifiers;
4. Combining and combining simple objects to create complex models.

At the same time, the study shows that the visual and intuitive interface of the Create section helps users save time and reduce errors in the modeling process. This is especially important for students in the educational process, as they quickly and effectively master the basic rules and algorithms of modeling.

The results show that the Create section of the 3D Studio Max program is an effective tool in the three-dimensional modeling process, facilitating work with geometric objects and lines. This section also allows users to develop a creative approach in the modeling process.

CONCLUSION

In conclusion, the study analyzed the process of working with geometric objects and lines through the Create section of the 3D Studio Max program. According to the results of the study, the Create section is the initial and important stage of the modeling process, allowing users to quickly and efficiently create three-dimensional models. It was found that using the Geometry and Shapes categories of the Create section, it is possible to create simple geometric shapes and lines. These objects serve as the main tool for creating complex models using modifiers. Also, during the study, the modeling algorithm was studied step by step: selecting an object, placing it in the working window, changing its shape using modifiers, and creating complex models.

The results show that the 3D Studio Max program allows you to develop important practical skills not only for professional designers and animators, but also for students in the educational process. At the same time, using the program simplifies the modeling process, saves time and helps to develop a creative approach.

Thus, it was found that in-depth study of the possibilities of working with geometry and lines through the Create section of the 3D Studio Max program is not only practical, but also scientifically significant.

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