THE USE OF COMPUTER TECHNOLOGY IN THE PROCESS OF DEVELOPING MATHEMATICAL MODELS

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Abstract
This study elaborates on the use of computer technology in mathematical modeling based on the analysis of mathematical modeling. The primary purpose of computer technology is to construct mathematical modeling via the use of software and computer programming. At the moment, computer technology is essential to the advancement of mathematical modeling. The importance of computer technology to mathematical modeling is made clear via the detailed study of the computer technology model formula.

Keywords. *Computer technology; Mathematics; Modeling*

Introduction
Many facets of society have heavily used mathematical modeling. The method of mathematical modeling is quite difficult. The use of information technology and computer technology in the present development of mathematical modeling has evolved into the technological assurance for the quick development of mathematical modeling. Being a significant ideological topic, mathematics fosters strong creative thinking in pupils. The term "mathematical modeling" refers to the application of pertinent mathematical knowledge to practical problems. Middle school students must continuously analyze and demonstrate complex mathematical problems, practice data operations before and after them, draw conclusions using a streamlined abstract processing, turn practical problems into related mathematical problems, and then construct systematic mathematical models. The use of computer technology in mathematics is become increasingly active and widespread as a result of the ongoing growth of this field of study. Calculus and other mathematical problems may be easily solved by computer technology utilizing the system programming function. Second, computer technology has a robust drawing feature, and while studying mathematics, particular mathematical drawings are required to help students comprehend the subject matter. As a result, mathematics may overcome the limitations of earlier modeling techniques and further delve into the mathematical activity with the use of computer technology.

Model building of computer software in mathematical modeling
Since most mathematical software can draw the well-known mathematical formulae and complete the calculation drill process, the way mathematical software is utilized in mathematical modeling is very comparable. The translation of different mathematical symbols may be substantially accelerated by mathematical software, which can also provide precise numbers for mathematical conclusions while still adhering to the fundamental principles of mathematics. The most popular form of operation in business school modeling is the data analysis approach. One of the challenging issues in mathematical modeling is that it works

with some really complex mathematical computing formulae and the quantity of mathematical knowledge created is also quite complex. Several mathematical programs now include robust data processing features, and incorporating these features into the curriculum for teaching mathematical modeling may help students' analytical processing skills as well as their capacity to think creatively. This clarifies the importance of computer technology in mathematical modeling as the clustering analysis and time series analysis features of mathematical software are computer-based.

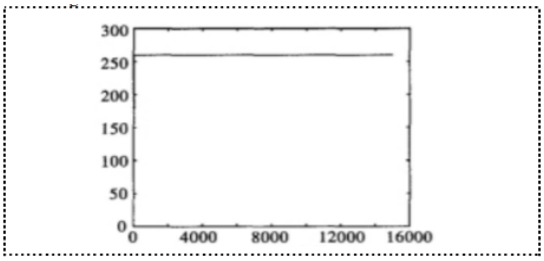

Figure 2. Threshold values for mathematical modeling

In order to identify the association and correspondence of the set of objects that are present in the data, which actually refers to some relationships between various mathematical data in the mathematical resource database, the correlation analysis of computer technology in mathematical modeling is primarily used in the modeling carrier. Throughout the modeling process, if one number changes, so will another correlation. Data mining and the use of several computer techniques and mathematical modeling expertise are both powerful capabilities of association analysis. To establish analysis model construction steps, computer technology is the mathematical analysis platform from the abstract goal to the final visual presentation, from discovery to solutions. As a result, it is necessary to have holistic thinking, be able to understand the data analysis method, as well as to pursue mathematical modeling to its logical conclusion, optimize every mathematical drill process, and produce accurate results for every data set. Due to the need of model construction, people engage in practical mathematical modeling. As a consequence, computer technology is needed to support mathematical modeling in order to provide reliable data outputs. The integration of mathematical modeling and computer technology can further enhance the quality and level of mathematical modeling. This is because the application of computer technology will comprehensively improve the practical problem solutions in mathematical modeling, help the relevant problems needed to solve in time, then clarify the specific process, and timely apply relevant data algebra to practical problems.

$$\sigma_p = \sqrt{\sum_{j=1}^{m}\sum_{k=1}^{m} A_j A_k \sigma_{jk}}$$

$$\frac{\sum_{i=1}^{n}\left[(X_i - \overline{X}) \times (y_i - \overline{y})\right]}{\sqrt{\sum_{i=1}^{n}(X_i - \overline{X})^2} \times \sqrt{\sum_{i=1}^{N}(y_i - \overline{y})^2}}$$

Figure 2. Threshold values for mathematical modeling

Specific application of computer technology in mathematical modeling

Computer technology application method

The primary categories of computer technology's applications in mathematical modeling are as follows: mechanism analysis, which refers to having an accurate and objective knowledge of something's properties, and model inference from fundamental physical principles and system data information.

The second approach uses data analysis,

primarily statistical analysis of data measurements, to identify the best mathematical model that fits the data. The third is simulation, which is essentially a standard statistical budget approach that is comparable to sample experimental research. The law of factor experiment states that the experiment should be initiated locally in the mathematical system, continually adjusted and improved in accordance with the real situation, and managed organically across the whole system. Yet, taking into account the ongoing evolution of delicate component mathematical models, the rule of artificial experimentation is founded on the comprehension and cognition of mathematical systems. There are typically four phases in a mathematical modeling process:

Modeling setup: Recognize the true context of the issue, define the modeling goal, gather the required data, and make an effort to comprehend the properties of the item.

Model assumption: Use correct terminology and make the required and fair simplifications based on the features of the object and the modeling goal.

Model construction: Examine the object's causality, then build an equation connection or other mathematical structure using the necessary mathematical tools and internal rules.

Model solution: We are able to solve a variety of ancient and contemporary mathematical approaches, such as solving equations, drawing diagrams, proving theorems, using logic or numbers, and more. V. Model analysis is the process of analyzing the model responses mathematically.

$$\sigma_p = \sqrt{\sum_{j=1}^{m}\sum_{k=1}^{m} A_j A_k \sigma_{jk}}$$

$$\frac{\sum_{i=1}^{n}[(X_i - \overline{X}) \times (y_i - \overline{y})]}{\sqrt{\sum_{i=1}^{n}(X_i - \overline{X})^2} \times \sqrt{\sum_{i=1}^{N}(y_i - \overline{y})^2}}$$

Figure Schematic diagram of the mathematical modeling model

Mathematical software, supported by computer technology

Typically, when computer technology is used to solve real mathematical issues, computer assistance is required. As a result, computers have created a variety of mathematical software for mathematical modeling to aid in its effective functioning. While this mathematical program operates in the same manner as the real operation, students are unable to use its data processing and analysis functions throughout the modeling process. Mathematical software with a low difficulty coefficient will be employed in the use of computer technology for mathematical modeling due to the reasoning and operation capability of such software. To answer issues in secondary linear mathematics, lingo is often utilized. It can quickly and precisely resolve the issues in mathematical modeling in the course of its actual implementation. Since Lingo is often used to address relevant issues in the advancement of contemporary science and technology, problem processing and solution may get the fundamental processing needs.

In addition to using a variety of equations, mathematical modeling also makes use of a variety of mathematical statistics knowledge. As a result, when learning mathematical modeling, one must also use statistical knowledge to address a variety of learning problems in order to solve related problems in practice and advance

the mathematical discipline. In mathematical modeling, increasingly difficult and sophisticated data are often encountered, and the processing procedure is quite complicated. Yet, computer technology may assist in applying these sophisticated mathematical concepts to my situation. The use of computer technology allows for the systematic drawing in time of both the incoming data information and the processed data tables and data. A significant portion of the present mathematical model setup is taken up by the composition sketching of mathematical models. These drawing programs may be used to express mathematical graphics drawings in real time. The drawing is more clearly intuitive when computer technology is used.

Conclusion

Because the computational model of a computer has some relevance in mathematical modeling and can better provide strong technical support for the construction and calculation of a mathematical model on the basis of computer technology analysis, computer technology has significant practical implications for mathematical modeling. The development of computer technology's data models may increase the effectiveness of mathematical modeling, enhancing its professionalism, correctness, and operational efficiency. The co-evolution of mathematical models and computer technology fosters the growth and development of computer generation, hastens the structural development of mathematical modeling, and enhances the application of mathematical models to technology.

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