Scientific Methods in Teaching Mathematics

Assistant lecturer Ahlam khalaf jabbar

Directorate of education, Baghdad, first Al-Rusafa.

Abstract

The methodology of teaching modern mathematics offers different possibilities to solve many problems, including the problem of engaging students in independent work and research, which develops the skills needed to solve their problems and develop their creative thinking processes. That one of these is the only scientific frame work which can is the science and methods of scientific research. This article describes science in its various segments, including the teaching of mathematics, from "the nature of mathematics to mathematical functions as an important method in the formation of knowledge and basic mathematical abilities and habits of the system the students. As well focuses on some of the obstacles in the teaching of mathematics that occur due to inappropriate treatment of science in the educational process.

The teaching of mathematics today occurs primarily in a professional framework. However, mathematics is a complex process that requires many things to be considered. In spite of the fact that a professional prerequisite for success, but it is not enough for it. This complexity can be solved by linking mathematics with other sciences. This way we get the process done in a harmonious manner in many frames. These frameworks are language frameworks, professional frameworks, and methodology Frameworks, scientific frameworks, the educational and psychological frameworks. Achieving harmony is not easy, so occasional slips and weaknesses occur in the teaching of mathematics, which influences the quality of mathematics education. This decline adversely affects the objectives of modern mathematics teaching that emphasizes engage students in independent and research work, and develop their skills problem solving and the development of creative thinking and creative skills.

The methodology of teaching modern mathematics offers different possibilities for solving the above problem. Where the teacher can provide many possibilities within the scientific frameworks. The basis of scientific

frameworks is the principle of science and methods of scientific research. These concepts often cause a dilemma. What does the scientific approach mean in teaching mathematics. The purpose of this article is to describe that meaning and to give a few hypotheses and issues that arise in scientific frameworks to teach mathematics. Which had to my mathematics teacher to be a world in order to apply the principle of science properly and research methods in the teaching of mathematics.

The scientific methods in the process of learning and engaging that Emphasized by scientists in teaching are the use of special methods - Scientific methods of research. These are basic methods of thinking and scientific research, which include: analysis and synthesis, measurement, abstraction, structure, generalization and specialization, induction, and conclusion.

The work of the mathematics teacher (or teacher) in the classroom differs in many ways from the work of the mathematician, but there are also common characteristics. In the process of learning, the world applies these methods as they are necessary to obtain new data, to prove them and to relate them to known facts and theories. Some Allen Zeraat sports include four basic steps are:

A. Identification of basic concepts
B. Formulation of axioms
C. Introducing new concepts
D. Derivation and proof of theory.

In other words, some field of scientific mathematics involves a set of basic axioms concepts, concepts and theories derived. In the learning process, a math teacher helps students discover and learn new mathematical facts. This knowledge can be obtained in different ways, and the rules of all these methods are also concepts and theories.

The deficiencies in the teaching of mathematics observed during teaching are

1. In the teaching of mathematics, the synthesis should not often be preceded by analysis, this affects the clarity of teaching and understanding of the problem and thus the devaluation of teaching. Analysis is more necessary in all research and can
2. not be avoided.
3. The need to distinguish and know the difference between the R circu in theories, where most of the students
4. It does not differentiate between circu h Bodo R in theories.

5. Inductive teaching there are an appropriate number of concrete and special cases. The mathematics teacher is often considered a large number of such cases, and thus the data obtained are inconclusive and unclear with a lack of knowledge among students. Another error by Teachers, when they do not give more students Opportunity to participate in the work of inductive sequence.
6. Circular is also a critical point in the teaching of mathematics because the transfer of concrete and individual to general is often difficult for students to absorb. This is why the math teacher faces the responsibility of making the transfer of students easier using appropriate methodological procedures and skill.
7. There is a lot of mathematical content that allows for generalization, but math teachers often do not like these positions. This is a bad trait for students who learn mathematics because generalizations are suitable for developing students' mathematical thinking. This is especially true for gifted children who are most likely those who have mathematical skills to study mathematics on a larger scale.
8. In teaching mathematics, measurement is not used sufficiently, although it is the best and fastest way to develop and acquire new mathematical facts.
9. Students' creativity is often suppressed by the excessive dependence of the mathematics teacher on the way mathematics is taught in textbooks.
10. It can be to say that a math teacher does not need to be a scientist in order to apply the principle of science and scientific methods in teaching appropriately and adequately. This happens in the teaching of mathematics without much intervention. Solving the problem of mathematics involves some research and development. This is why the teacher must create a spirit of curiosity in his students, a tendency for independence, mental work and show the ways of new discoveries. And to be a mathematics teacher in an innovative spirit through use different creative teaching methods.