

EDUCATIONAL VALUES OF MATHEMATICS

Mathematics is an important subject in school curriculum. It is more closely related to our daily life as compared to other subjects . Mathematics helps to develop the child as social and intellectual citizen.

Every teacher of mathematics needs to be informed and convinced about the educational value of his subject . He must be convinced about the utility of the subject so that he may be able to convince his student likewise. The idea of the utility of the subject will develop in him keen interest in it . The knowledge of its values and aims will stimulate and guide the teacher to adopt effective methods, devices and illustrative materials knowledge of educational values help the teacher to avoid aimlessness in teaching.

There are three considerations for which a child is sent to school .education must contribute towards the requirement of these values-

- i) Knowledge and skills
- ii) Intellectual habits and power
- iii) Desirable attitude and ideals

These values can be called utilitarian, disciplinary and cultural values of education respectively.

Provision of knowledge and skill is the practical or utilitarian value, provision of intellectual habits and power is the disciplinary value and provision of training in desirable attitude and ideals is the cultural value.

Mathematics possesses various educational values . These are-

1. Practical value
2. Disciplinary value
3. Cultural value
4. Social value
5. Moral value
6. Aesthetic values
7. Intellectual value
8. Vocational value
9. International value

1. Practical value:

Everyone uses some form of mathematics directly or indirectly even the commonest man cannot pull on without counting and calculations. Various fundamental processes of mathematics like counting for fundamental operations, measurements of areas, volume, percentage etc. have got immense practical value of life. In many occupations such as banking, accountancy, auditing, taxation, insurance by which important foundations of life are carried out are ultimately dependent on essential knowledge and is the basis of the progress of science, technology, economy, production and society in general.

2. Disciplinary value:

According to Locke, "Mathematics is a way to settle in the mind a habit of reasoning". It trains or disciplines the mind. Due to its very nature, it possesses a real disciplinary value. It is exact, true and to the point knowledge, and therefore creates a discipline in the mind. Its truths are definite and exact. It develops reasoning and thinking powers more and demands less from memory. The student comes to realize that thinking makes him a successful student of all the subjects. Its study results in the development of power rather than the acquisition of knowledge and knowledge also comes as a natural consequence or by product.

3. Cultural value:

Mathematics is the mirror of civilisation. Mathematics has got its cultural value, and this value is steadily increasing day by day. It helped man to overcome difficulties in the way of his progress. It has played a major role in bringing him to such an advanced stage of development. The modern civilisation owes its advancement to the progress of various occupations such as agriculture, engineering, surveying, medicine, industry, navigation, railroad building etc., these occupations are the backbone of cultural development. Therefore mathematics shapes culture as a playback pioneer. Some important aspects of cultural heritage have been preserved in the form of mathematical knowledge only.

4. Social value:

Mathematics plays an important role in the organisation and maintenance of our social culture. Society is the result of the inter-relations of individuals. It consists of big and small groups and there are sub-groups within each group. Mathematics enables us to understand the interrelations of individuals and the possibilities of various groups. Society is a phenomenon of balancing and counter-balancing of various social forces. Mathematics helps in creating a social order in this phenomenon. It regulates the functioning of society in many ways. Social conditions like justice, healthy competition, symmetry, harmony etc. have often to be described in mathematical terms for the purpose of clarity. Mathematics plays a major role in development of communication. It has helped in knitting the vast society into a family.

5.Moral value :

The study of mathematics helped in moral development and character formation. It helps in the developing proper moral attitude as there is no place for prejudiced feeling, biased outlook, doubts and half truths, discrimination etc. in learning of this subject. The qualities like honesty, truthfulness, justice, dutifulness, punctuality, self-confidence, discrimination between evil and good, observation of rules and belief in systematic organization and arrangement are indirectly inculcated through the teaching of mathematics. These qualities go towards developing a morality and sound character.

6.Aesthetic values:

People consider mathematics as unartistic and non-aesthetic. But for true student of mathematics, the subject of beauty, symmetry, balance, harmony, fineness, art and music. There is a great pleasure in successfully solving a mathematical problem. Mathematics also provides entertainment through its own riddle, games and puzzles.

7.Intellectual value:

The study of mathematics helps us in the development of many intellectual traits like power of thinking and reasoning, induction, analysis, synthesis, originality, generalisation, discovery etc. Every mathematical problem poses an intellectual challenge and is a unique mental exercise. The subject is taught for the development of power rather than knowledge. Mathematics develops our powers acquiring knowledge, thinking, reasoning, judgement, and generalisation.

8.Vocational value:

A sound and productive vocational life demands a sound mathematical background. The study of mathematics prepares us for various occupations like engineering, accountancy, auditing, taxation, banking, agriculture, construction, budgeting, computer application etc. These occupations have immensely benefited from mathematics in their development. The knowledge of mathematics is helpful in achieving vocational efficiency in many spheres.

9. International value:

Mathematics is a universal subject and it helps in creating international understanding. Its history presents a very good picture of overall development of our civilisation. Mathematics is the common heritage of mankind and it is not an exclusive property of any particular nation, race or country.