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Gender attitude towards selection of mathematics as subject

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Abstract
The present study entitled "Gender Attitude towards the selection of mathematics as subject" been conducted with an aim to know their attitude towards maths. The Sample of the study consists of 48 boys and 52 girls in the age group of 16-18 years of different educational institutes of Gurgaon. Data was collected with the help of a questionnaire. Results reveal that majority of the respondents believe that maths should be considered as they found it very useful in the near future but also believe that it is not that easy too.

Keywords: mathematics, subject preference, education

Introduction

Mathematics is the cradle of all creations, without which the world cannot move an inch. Be it a cook or a farmer, a carpenter or a mechanic, a shopkeeper or a doctor, an engineer or a scientist, a musician or a magician, everyone needs mathematics in their day-to-day life. Even insects use mathematics in their everyday life for existence.

Mathematics (from Greek μάθημα máthēma, "knowledge, study, and learning") is the study of topics such as quantity (numbers), structure, space, and change. There is a range of views among mathematicians and philosophers as to the exact scope and definition of mathematics. Mathematicians seek out patterns and use them to formulate new conjectures. Mathematicians resolve the truth or falsity of conjectures by mathematical proof. Mathematics developed at a relatively slow pace until the Renaissance, when mathematical innovations interacting with new scientific discoveries led to a rapid increase in the rate of mathematical discovery that has continued to the present day.

Mathematics is a methodical application of matter.... Certain qualities that are nurtured by mathematics are power of reasoning, creativity, abstract or spatial thinking, critical thinking, problem-solving ability and even effective communication skills.

Galileo Galilei (1564–1642) said, "The universe cannot be read until we have learned the language and become familiar with the characters in which it is written. It is written in mathematical language, and the letters are triangles, circles and other geometrical figures, without which means it is humanly impossible to comprehend a single word. Without these, one is wandering about in a dark labyrinth." Carl Friedrich Gauss (1777-1855) referred to mathematics as "the Queen of the Sciences". Benjamin Peirce (1809-1880) called mathematics "the science that draws necessary conclusions". David Hilbert said of mathematics: "We are not speaking here of arbitrariness in any sense. Mathematics is not like a game whose tasks are determined by arbitrarily stipulated rules. Rather, it is a conceptual system possessing internal necessity that can only be so and by no means otherwise." Albert Einstein (1879-1955) stated that "as far as the laws of mathematics refer to reality, they are not certain; and as far as they are certain, they do not refer to reality." Mathematics is essential in many fields, including natural science, engineering, medicine, finance and the social sciences. Applied mathematics has led to entirely new mathematical disciplines, such as statistics and game theory. Mathematicians also engage in pure mathematics, or mathematics for its own sake, without having any application in mind. There is no clear line separating pure and applied mathematics, and practical applications for what began as pure mathematics are often discovered

Importance of Mathematics

The skills of learning today are more important than knowledge, which is so readily available on the Internet.... Studying mathematics not only will develop more engineers and scientists, but also produce more citizens who can learn and think creatively and critically, no matter their career fields.

There are people who can write for pages that math is an art form and contains an inherent beauty, so the purpose is wrapped in its beauty. There are people who would say that math teaches logic and problem solving, and therein lies its true purpose.... There is real-life application of almost every form of mathematics.

Certain qualities that are nurtured by mathematics are power of reasoning, creativity, abstract or spatial thinking, critical thinking, problem-solving ability and even effective communication skills.... Even insects use mathematics in their everyday life for existence.

Table 1

Subject of students	N= 100 (%ages)
Choose these subjects on your own	
Yes	92
No	8
Anybody can choose Maths as a subject	
Yes	68
No	18
Not Aware	14
Certain subjects are Meant for boys & girls	
Yes	16
No	64
Not aware	20
Do you like studying maths?	
Yes	56
No	20
Partially	24
Acc to you, easiest part of maths	
Algebra	36
Numerical	12
Geometry	52
Others	-
Toughest part of Maths	
Algebra	32
Geometry	56
Others	12
How good you are in maths	
Good	36
Average	60
Not aware	4
Family force them to Have maths as Optional subject	
Yes	4
No	96
Do you think that Maths helps them in career	
Yes	48
No	4
Partially	48
Maths is a beneficial Subject	
Yes	92
No	-
Not aware	8
Planning for higher studies in maths	
Yes	56
No	44
Would you Suggest others to Have maths as an optional subject?	
Yes	76
No	12
Can’t say anything	12
Percentage they Learn from there maths teacher	
100%	8
80-90%	72
Above 50%	20
Grab the subject easily	
Yes	48
No	4
Partially	52
Rating of maths Subject	
5 star	32
4 star	48
3 star	12
Below 3 star	8
Who force you to learn Maths?	

Interest	44
Family	12
Teacher	36
Other	8

Table ….reveals that 92% of the total sample take their own decision for subject selection; 68% stated that they can choose maths if they wish to and they don't think they "maths is meant for boys only". More than 50% of them wish to study maths but they like geometry in maths the most. Surprisingly they like geometry but also consider it the most difficult one. 60% of them consider themselves an average in maths. Almost all the students (96%) stated that they have never being forced to take maths as an optional subject.

Table depicts that equal (48%) of the sample believe that "math is a very beneficial subject" whereas 48% partially believe in the same. 56% of the students said that they are planning to have maths in their higher studies and they will definitely guide others to have maths as an optional subject. 72% of them believe that they learn maths majorly from maths teacher. Though 52% of them stated that they grab maths not so easily. For them "maths is a difficult subject". 48% of the students rated 4 star to maths, 32% rated 5 star, 12% rated 3 star and only 8% rated below 3 star. 44% of them stated that their interest in maths help them to learn.

Discussion

Mathematics is a methodical application of matter. It is so said because the subject makes a man methodical or systematic. Mathematics makes our life orderly and prevents chaos. Certain qualities that are nurtured by mathematics are power of reasoning, creativity, abstract or spatial thinking, critical thinking, problem-solving ability and even effective communication skills.

The greatest hurdle in the process of learning mathematics is lack of practice. Students should daily work out at least 10 problems from different areas in order to master the concept and develop speed and accuracy in solving a problem. Learning of multiplication-tables should be encouraged in the lower classes. Anyone can be a mathematician if one is given proper guidance and training in the formative period of one's life. A good curriculum of mathematics is helpful in effective teaching and learning of the subject.

Experience says learning mathematics can be made easier and enjoyable if our curriculum includes mathematical activities and games. Maths puzzles and riddles encourage and attract an alert and open-minded attitude among youngsters and help them develop clarity in their thinking. Emphasis should be laid on development of clear concept in mathematics in a child, right from the primary classes.

If a teacher fails here, then the child will develop a phobia for the subject as he moves on to the higher classes. For explaining a topic in mathematics, a teacher should take help of pictures, sketches, diagrams and models as far as possible. As it is believed that the process of learning is complete if our sense of hearing is accompanied by our sense of sight. Open-ended questions should be given to the child to answer and he/she should be encouraged to think about the solutions in all possible manners. The child should be appreciated for every correct attempt. And the mistakes must be immediately corrected without any criticism.

Another very effective means of spreading the knowledge of mathematics among students is through peer-teaching. Emphasis should be laid on development of clear concept in mathematics in a student, right from the primary classes.

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