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The Study Of Students' Perception On Mathematics In First Year Undergraduate Course

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Abstract

Mathematics provides an effective way of building mental discipline and encourages logical reasoning and mental rigor. In addition, mathematical knowledge plays a crucial role in understanding the contents of other subjects such as science, social studies, and even music and art. Mathematics was introduced in first year undergraduate course, primarily to increase the mathematical skills and knowledge required even in social science, humanities, commerce, accountancy and other aligned fields. The University had noted that the subject shall be beneficial to students, who want to pursue higher education in social sciences, commerce, fine arts and biological sciences. This paper is an attempt to explore the perceptions of students on Mathematics in the first year undergraduate course. A total number of 113 respondents were formed as a sample size. Data was accumulated through well-structured questionnaire. The paper suggests a few strategies to promote interest and confidence in the subject of Mathematics.

Keywords: Mathematics, Students' perception, undergraduate course.

Mathematics is not about numbers, equations, computations or algorithms: it is about understanding.**-William Paul Thurston**

- **<u>INTRODUCTION</u>:**

that is cherished by societies worldwide. It is believed to be an instrument for political, socioeconomic, scientific and technological developments that is cherished by societies worldwide. It is believed to be an instrument for political, socioeconomic, scientific and

technological developments It is believed to be an instrument for political, socioeconomic, scientific and technological developments Mathematics is used to be an instrument for Political, Socioeconomic, Scientific and technological developments. Mathematics enables the students to obtain analytical skills and the technical aptitude to proceed to a successful career in business, finance and many other fields or to proceed to further study. The ability to think analytically is something that remains with the students for the rest of his/ her life, enabling his/ her to adapt to new developments in the chosen career. At undergraduate level, syllabus in the subjects structured carefully so that the topics of Mathematics and Statistics are of greatest relevance to the chosen course. In spite of the benefits of study Mathematics, it is commonly accepted that Mathematics is difficult, obscure and of little interest to many students. According to student's perception towards Mathematics, in Mathematics education, teaching and learning play an important role. This paper focuses on the introduction of Mathematics at first year of most of undergraduate courses and student's perception towards it. And also how it affects their academic attainments.

- **LITERATURE REVIEW:**

Krach and Crutch (1988) state that, "man's perceptions are how he sees, hears, smells and feels the world about himself". They believe that what man perceives, feels, thinks about and imagines depends upon the physical and social environments in which he lives and upon his own biological nature, partly the way his brain and nervous system work. (Scott,1975) views perception as both unique and complex and what we perceive around us is highly subjective and depends on our needs, our expectations and experiences.(Crawford, Gordon, Nicholas, & Prosser, 1994) found that the majority of students perceived mathematics as "numbers, rules and formulae". For some student's awareness of mathematics involves simply the recall of facts and the use of formal procedures. These views were associated with what he calls a "surface approach" to learning mathematics, that is, "the reproduction of knowledge and procedures".

- **OBJECTIVE OF THE STUDY:**

The main objective of this study is to explore the perceptions of students towards Mathematics at their first year undergraduate courses. As a consequence of it, our particular objectives are the following:

— To know the interest among the students about mathematics.
— To identify the factors affecting to learn Mathematics in first year of most undergraduate courses.
— To identify the students' opinion about need of Mathematics in first year.

- **RESEARCH METHODOLOGY:**

The research is based on primary as well as secondary data. Secondary data was collected from various journals, articles, working papers, web sites etc. Primary data is collected through questionnaire.

- **LIMITATIONS OF THE STUDY:**

This study was an exploratory research and it has several limitations. The sample comes from only one College and one month of study, so findings cannot be generalized to other Colleges or students. In addition, due to time constraints, it was not possible to undertake the test in detail.

- **DATA ANALYSIS:**

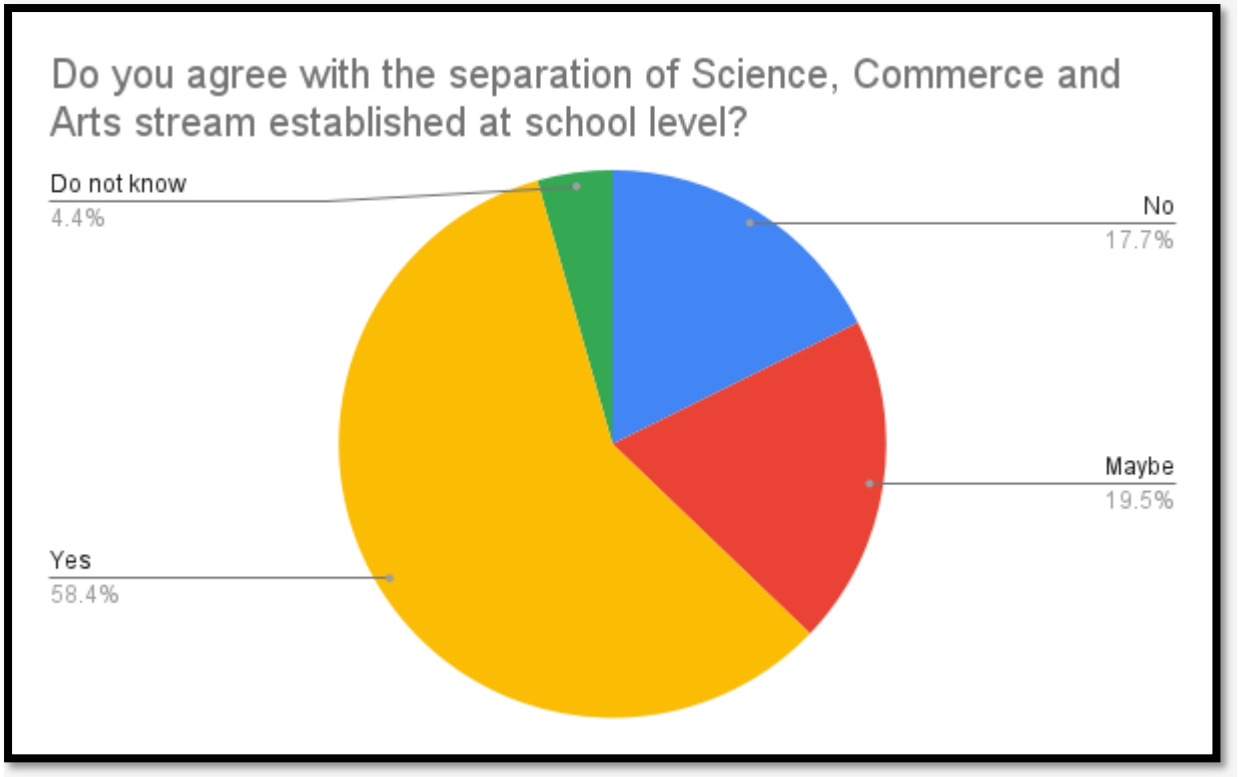
There were around 11 questions in the questionnaire. Some of the questions had to be answered on a Likert scale on a scale from 1 to 4 (1 meaning totally disagree and 4 meaning totally agree). The questions were:

1) Do you agree with the separation of Science, Commerce and Arts stream established at school level?
2) Do you think that Mathematics should be compulsory in first year of most undergraduate courses?
3) Are you satisfied with the Mathematical knowledge that you have learnt during your studies?
4) Do you think that Mathematics requires a certain creative skill?
5) Do you believe that the Mathematical knowledge acquired is directly influenced by the teacher's ability to transmit it?
6) Do you think that Mathematics is interesting?
7) How strongly do you agree with the fact that Mathematics should be studied by all the students at least at initial level of their degree program?
8) Do you consider that mathematics only entails memorizing and a following of concrete rules?
9) Do you think that mathematics is uniquely characterized by the capacity of making use of rules and calculating quickly?
10) How do you feel when you speak about Mathematics?
11) What real-life applications of mathematics do you know in your chosen course?

- Total No. of Samples = 113 students
- Survey Area – Chandrabhan Sharma College of Arts, Science & Commerce

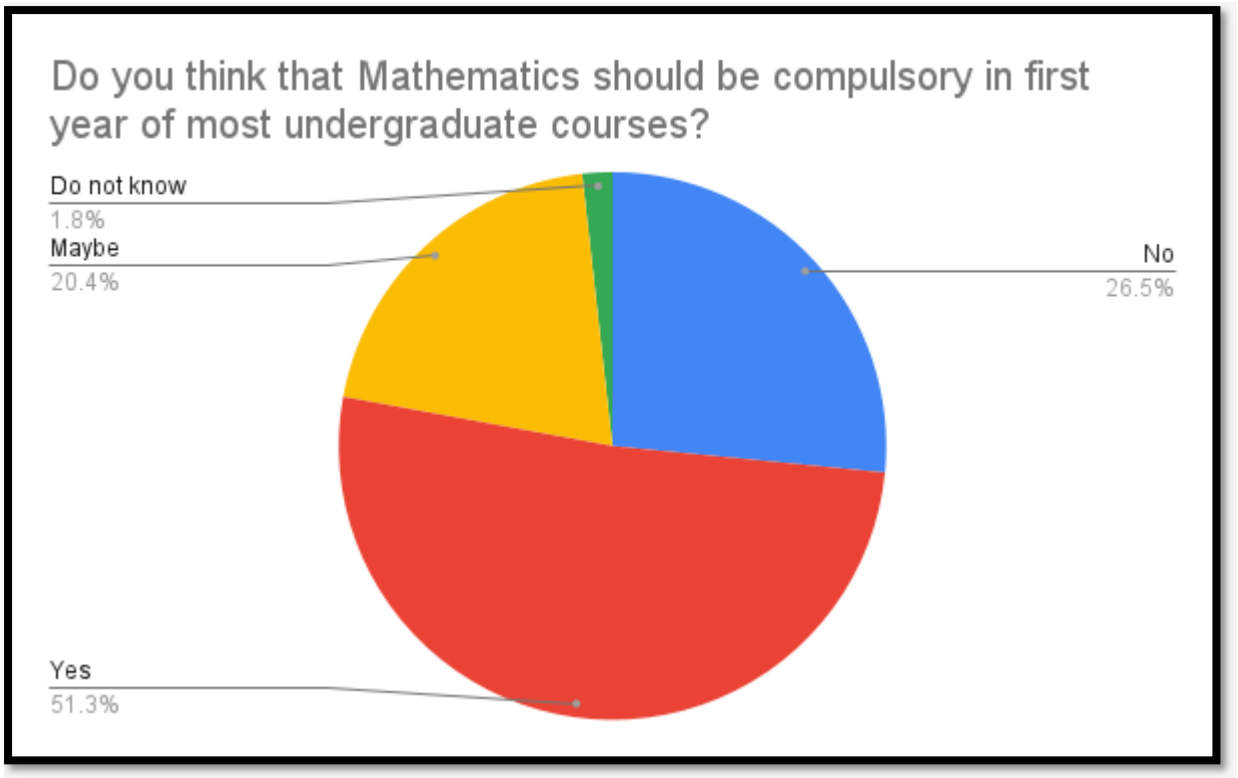
1. Do you agree with the separation of Science, Commerce and Arts stream established at school level?

Observation – It is found that as per the survey, 58.4% of the students agree of the separation of Science, Commerce and Arts stream, 17.7% of the students do not agree, 19.5% of the students are not sure and 4.4% of the students do not have an answer for the same.



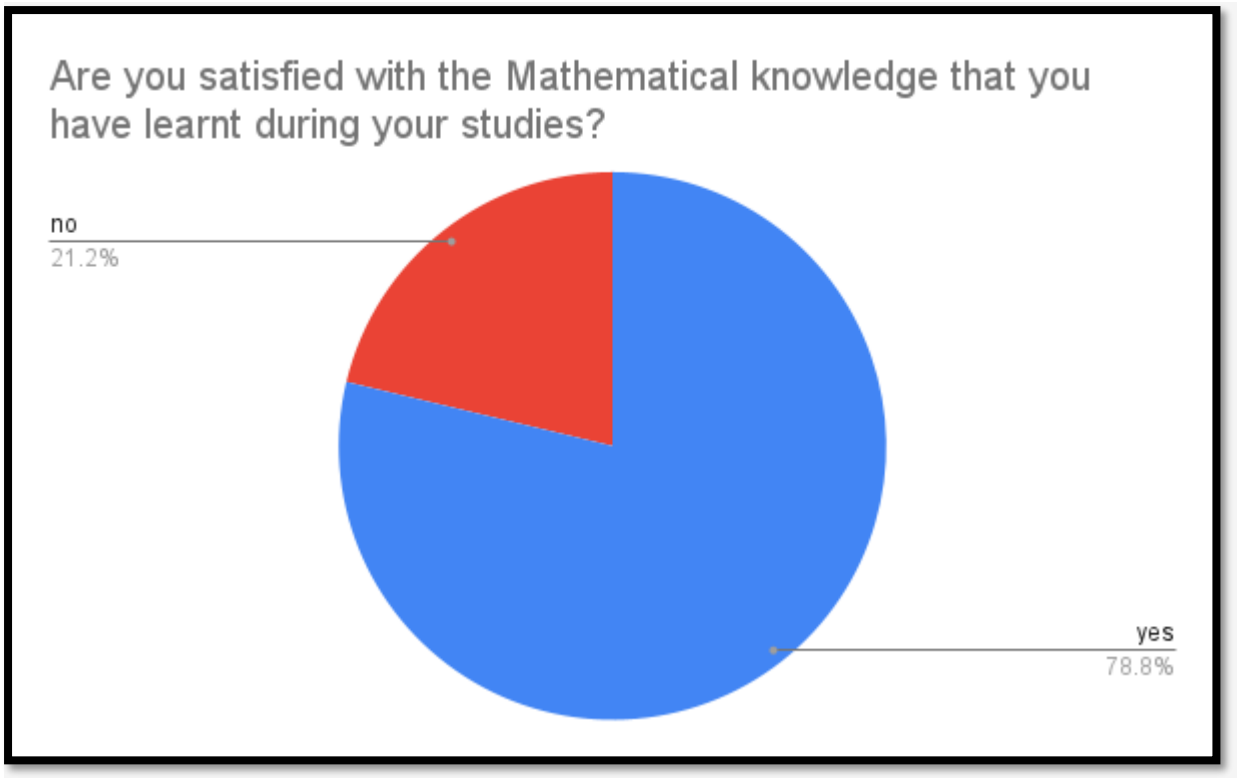
2. Do you think that Mathematics should be compulsory in first year of most undergraduate courses?

Observation – Out of the total no. of samples, 51.3% of the students agreed that Mathematics should be compulsory in first year of most undergraduate courses like FYBCOM. 26.5% of the students disagreed, 20.4% of the students were not sure and 1.8% of the students were not aware.



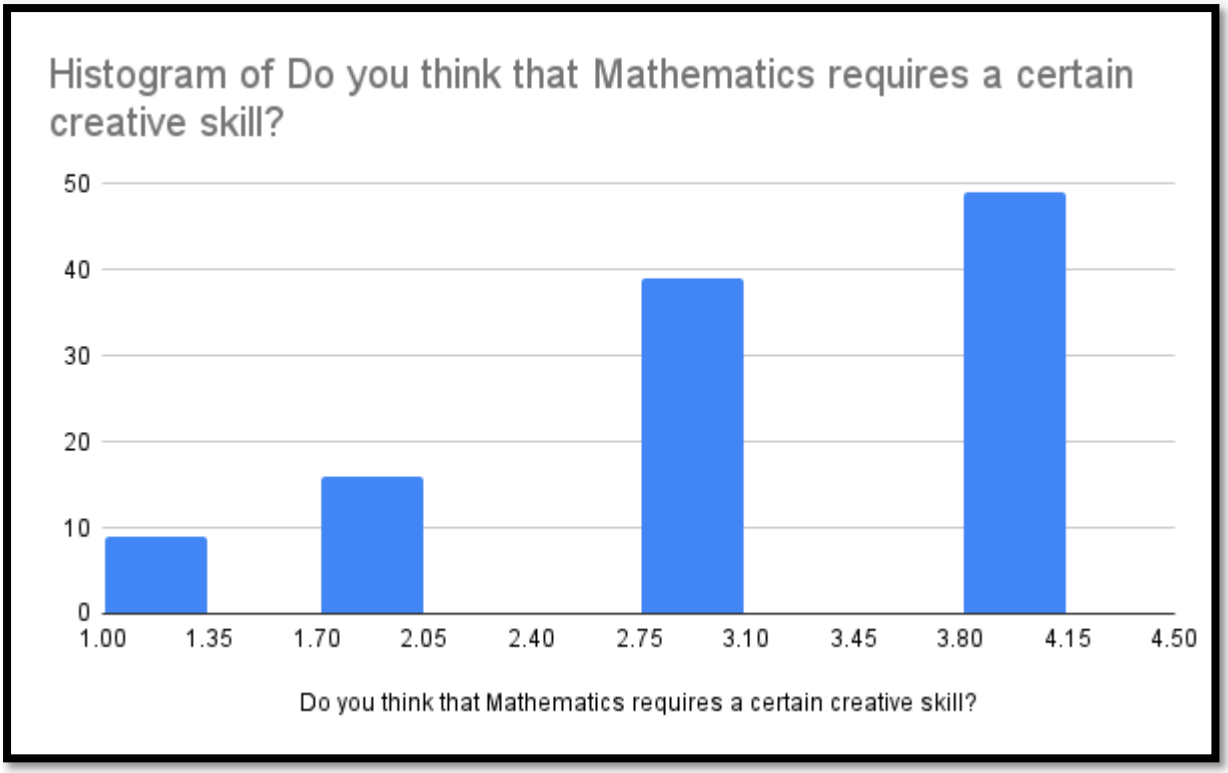
3. Are you satisfied with the Mathematical knowledge that you have learnt during your studies?

Observation – It is observed that 78.8% of the students seem satisfied with the Mathematical knowledge that they have learnt in the course of their learning wherein 21.2% of the students are dissatisfied.



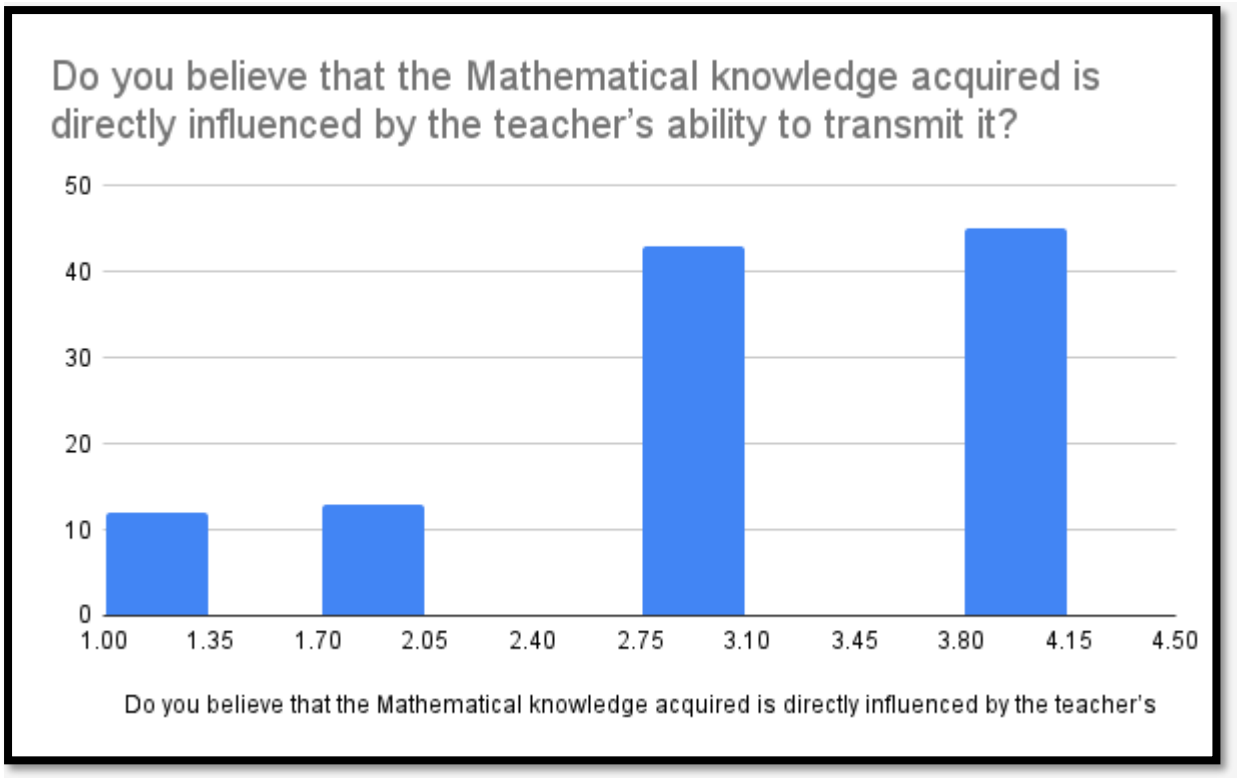
4. Do you think that Mathematics requires a certain creative skill?

Observation – Majority of the students strongly agreed that Mathematics does require a certain creative skill on a scale of 1 - 4. It builds divergent thinking skills, analytical skills and problem solving skills. Not all the students have a liking for Maths and so a certain level of skill is required to take interest in a subject like Mathematics.



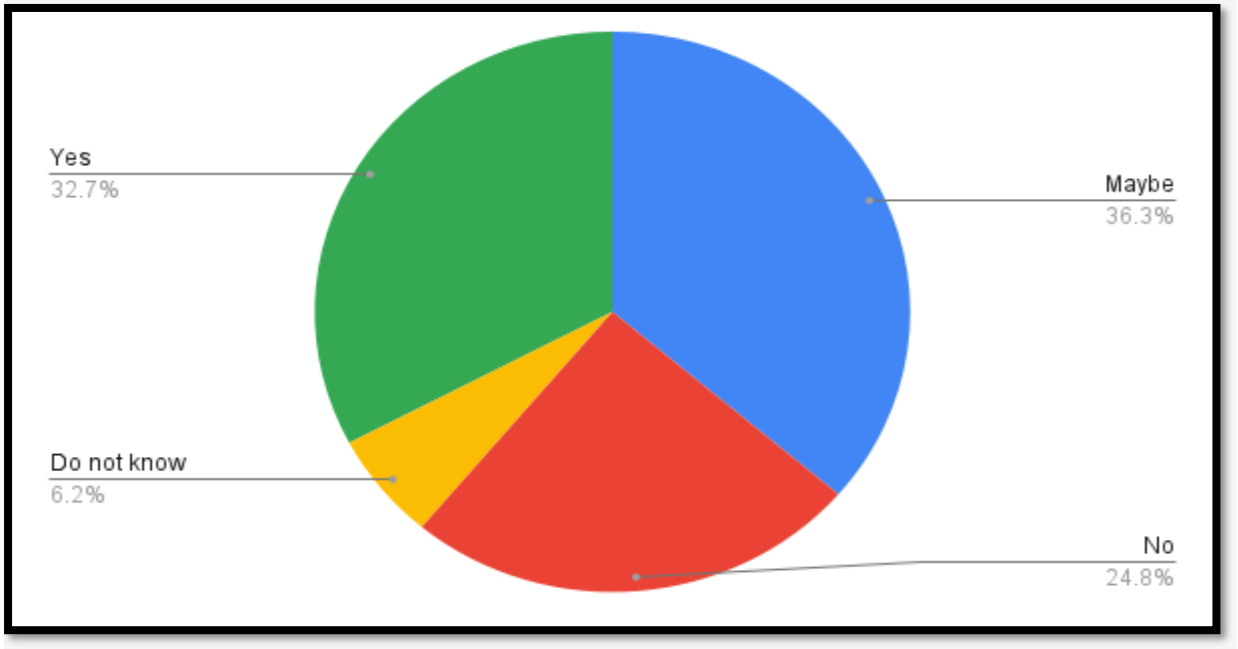
5. Do you believe that the Mathematical knowledge acquired is directly influenced by the teacher's ability to transmit it?

Observation – From the below data, it is concluded that Mathematical knowledge acquired is directly influenced by the teacher's ability to transmit the knowledge as they are the guiding force.



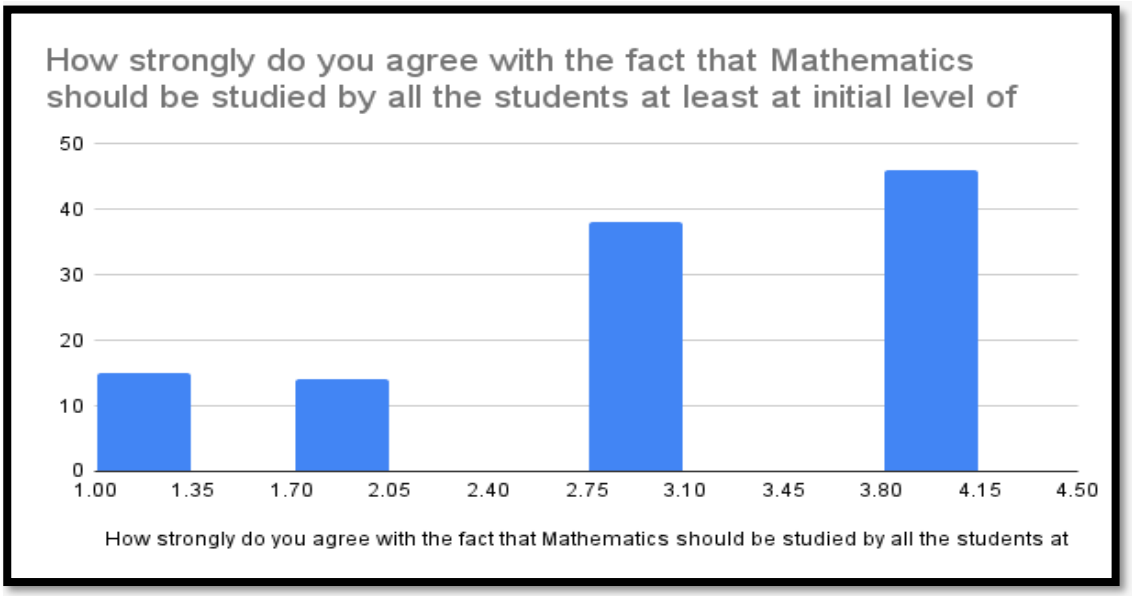
6. Do you think that Mathematics is interesting?

Observation – It is observed that majority of the students believed that Mathematics is interesting. Out of the total no. of samples, 32.7% of the students agreed that Mathematics is interesting. 36.3% of the students are were not sure, according to 24.8% of the students mathematics is not interesting and 6.2% of the students were not aware.



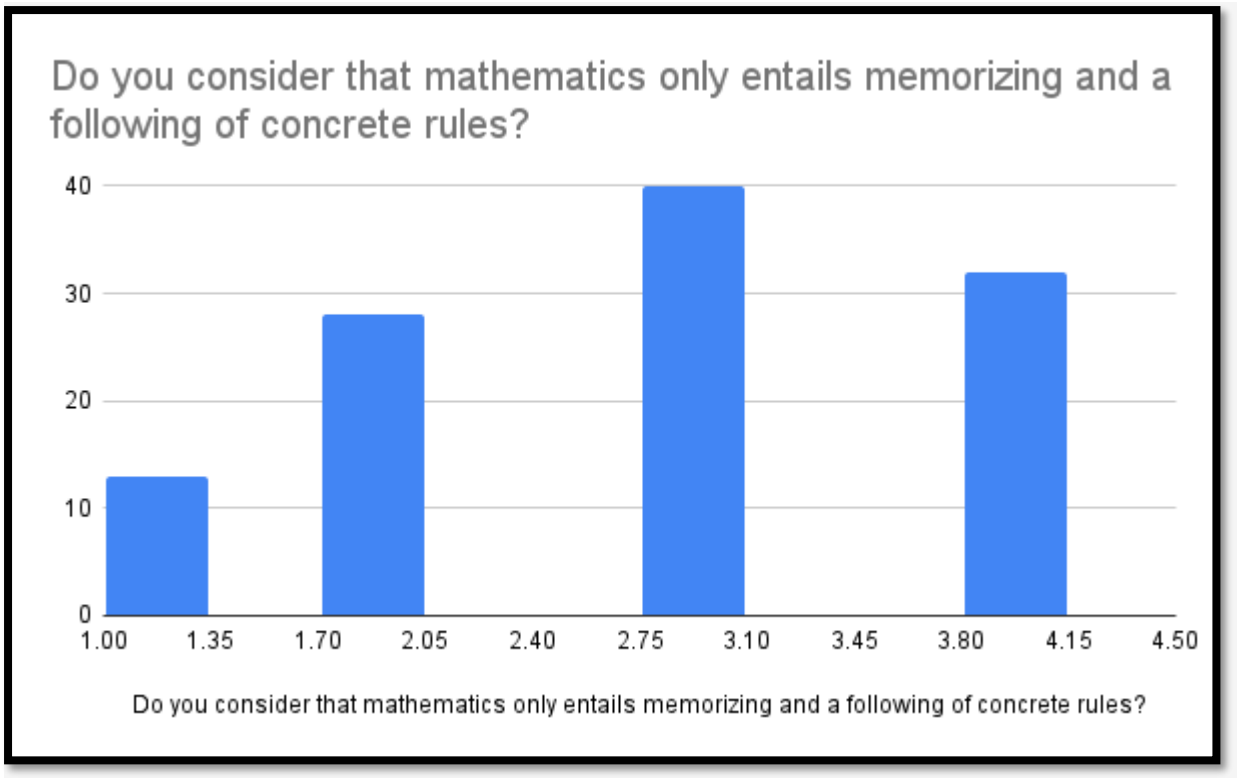
7. How strongly do you agree with the fact that Mathematics should be studied by all the students at least at initial level of their degree program?

Observation – It is majorly agreed that Mathematics should be studied by all the students at least in initial level of their degree program on a scale of 1 to 4.



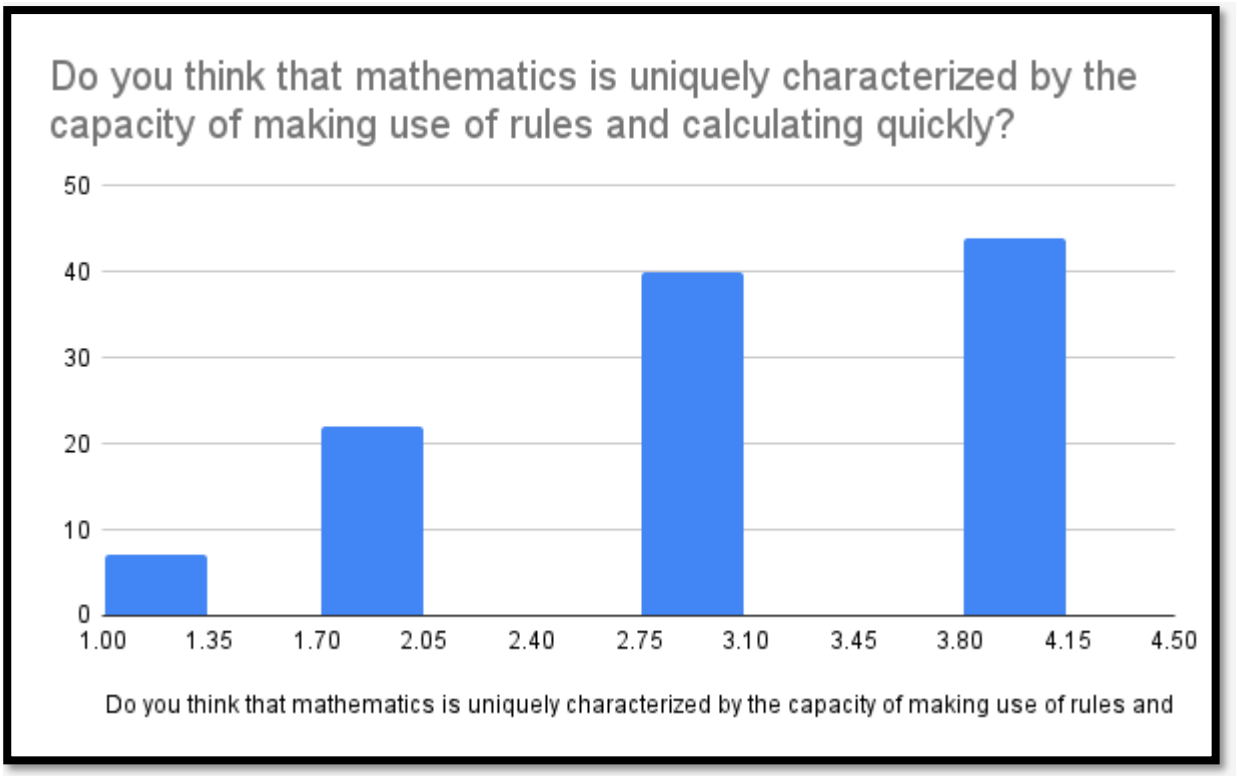
8. Do you consider that mathematics only entails memorizing and a following of concrete rules?

Observation – As shown in the graph, the students' point of view on mathematics only entails memorizing and following of concrete rules the students believe that mathematics does not uniquely involve memorization and rule-following. The students responded between 3 to 4 highest on the scale.



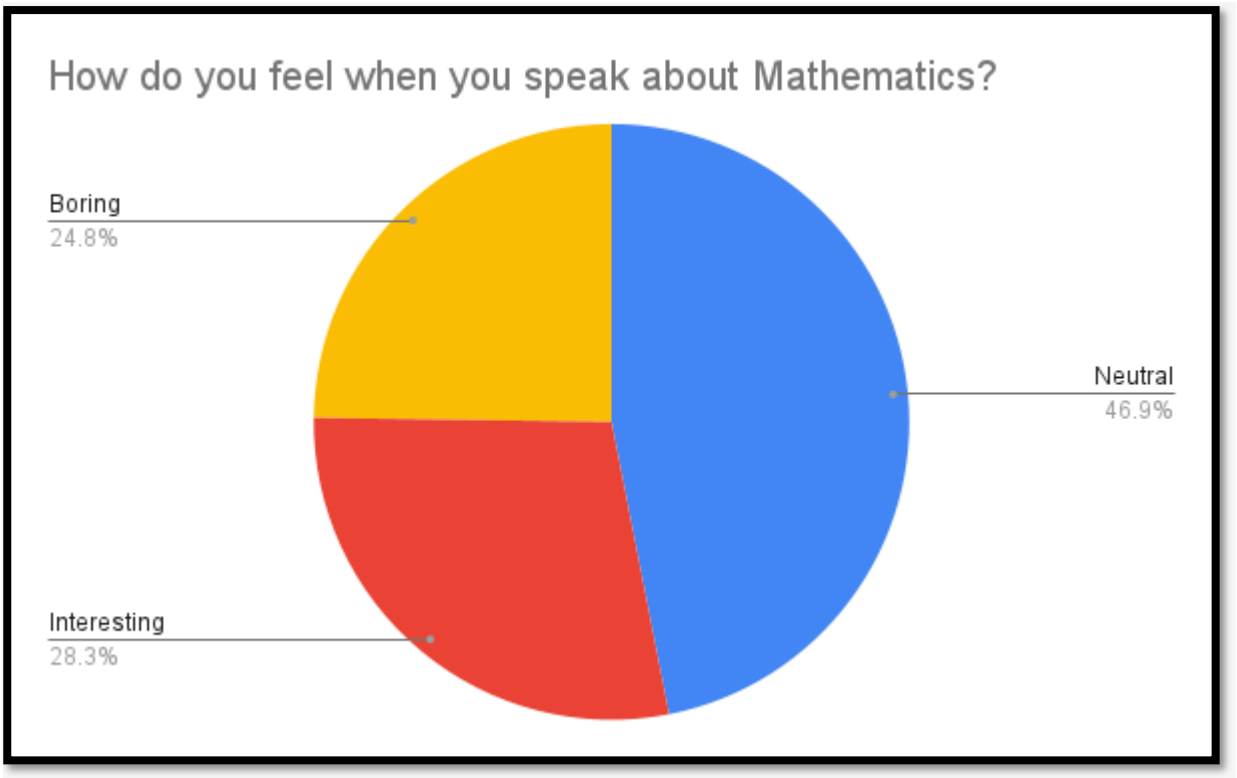
9. Do you think that mathematics is uniquely characterized by the capacity of making use of rules and calculating quickly?

Observation – Yes, majority of the students consider that mathematics is uniquely characterized by the capacity of making use of rules and calculating quickly. It improves and enhances our analytical and numerical skills.



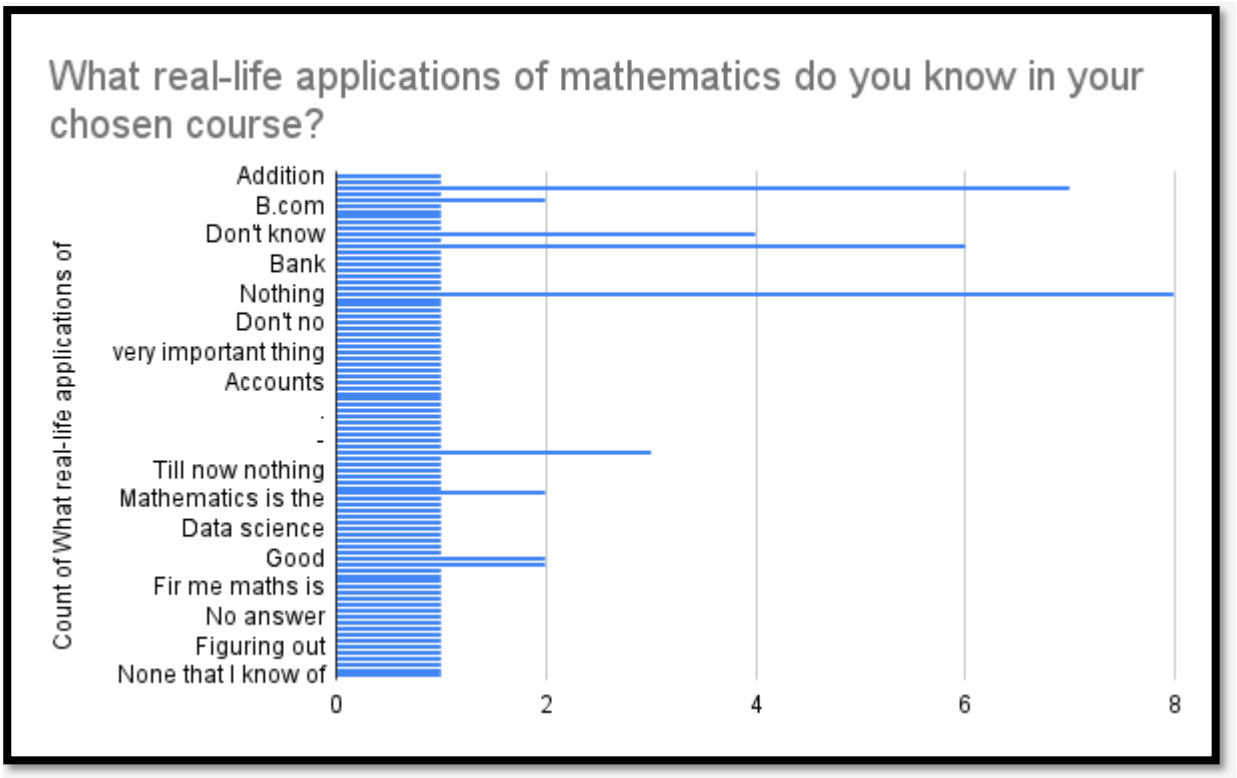
10. How do you feel when you speak about Mathematics?

Observation – Majorly 28.3% of the students feel Mathematics is interesting and they like to talk and discuss about it. 24.8% felt otherwise and voiced their opinions expressing that Mathematics is boring and 46.9% preferred to be neutral by not commenting on the question.



11. What real-life applications of mathematics do you know in your chosen course?

Observation – In terms of real life applications, many of the students expressed their views like using math in day to day life in terms of addition, banking and finance, some were clueless and were trying to figure out the answer wherein a majority of them didn't have any reason and probable thought that Mathematics does not have any real life applications.



- **CONCLUSION:**

Students' understanding about Mathematics and their perception are crucial in the sense of success and competence they develop. The anxiety for the subject influences the learning of Mathematics and the academic achievement. Sometimes due to low self-esteem and fear of failure these is Mathematical anxiety. Most of the first-year students feel that this subject should be available to students at least at the initial level of their degree program. Out of the incoming students, most of them lack mathematical competencies, background knowledge and lack learning, studying and organizational skills (time management and setting priorities).

We conclude that mathematical concepts and processes present various levels of difficulties for some first year undergraduate students. Past experiences, attitude and motivation towards mathematics can affect students' achievement. Effective teaching involves more than the teaching of mathematical concepts: it also includes helping students developing interest, confidence and positive disposition towards mathematics.

Lecturers should support academically, including teaching practices and encouragement to weaker students.

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