

KNOWLEDGE OF MATHEMATICS IS NECESSARY TO STUDY OTHER THAN SCIENCE SUBJECTS

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ABSTRACT

The purpose of this study is to investigate the perspectives of undergraduate students with regard to the use of mathematics in fields that are not related to science, namely in the fields of business and entrepreneurship. The conventional bounds of mathematical application, which were mostly confined to scientific areas, have been challenged by the rising prevalence of mathematical approaches in these sectors over the course of the previous two decades. In all areas of study, reasoning is built on the foundation of mathematics, which is primarily a language and a system of conclusions that are formed from definitions and postulates. Graphs and charts are used to present the data collected and to communicate the results.

Key words: Mathematics, Students, Perceptions, Bridging, Comprehensive approach

CONTEXT AND BACKGROUND

There is no doubt that India has a long and illustrious history in the field of education, extending back thousands of years. India has historically been recognised as a centre for education and the dissemination of information ever since ancient times. The origins of India's educational tradition may be traced back to the country's ancient civilizations, which were characterised by a profound connection between learning and the pursuit of spiritual and philosophical goals.

An Education System from Antiquity

The educational system in ancient India was holistic, meaning that it placed equal importance on academic learning as well as the development of moral and spiritual values. During the time period of around 1500 to 500 BCE, the Vedas and Upanishads served as a repository of knowledge and served as the foundation for our educational system. Gurukulas, also known as residential schools, were extremely important in the process of instilling education. The students lived in these ashram-like settings with their teachers, who were known as gurus, and they learned not only academic knowledge but also moral principles and skills for everyday life. Each student received individualised attention that was tailored to their own abilities and interests under the Gurukula system, which features a high degree of personalisation. This made it possible to receive a comprehensive education that encompassed not just academic disciplines like as mathematics, astronomy, and

language, but also practical skills such as archery, agriculture, and business. Students were encouraged to engage in intellectual discourse and critical thinking through the use of these standard instructional methods, which included debates and discussions.

The contributions made to the fields of mathematics and science

The contributions that India has made to the field of mathematics are particularly notable. Aryabhata, Brahmagupta, and Bhaskara were among the pioneering scholars who made significant contributions to the fields of algebra, arithmetic, geometry, and astronomy. There are a number of fundamental mathematical ideas that originated in ancient India and are widely utilised all over the world today. Some of these principles include the concept of zero, the decimal system, algebraic methods, and the magnitude of pi.

The Development of the Contemporary Educational Environment

Over the course of its history, India's educational system has developed, incorporating elements of a variety of civilizations and colonial powers. During the time of British colonial rule, a more organised and formalised educational system was implemented. This system incorporated Western educational principles with the existing knowledge of traditional Indian practice. Following the country's attainment of independence, India made tremendous progress in broadening access to education, concentrating on literacy, and developing a professional labour force.

At the Present Time, the Educational Landscape

From elementary schooling to higher education and specialised vocational training, India's education system spans a broad range of educational requirements, making it one of the most extensive and varied educational systems in the world today. The nation is home to a vast network of educational establishments, including universities, colleges, and other educational establishments, which provide a variety of courses in a variety of subjects, including engineering, medicine, the sciences, the humanities, and commerce.

The Opportunities and Obstacles That Await Us

Even though India has achieved considerable progress in education, there are still difficulties that need to be addressed, such as guaranteeing inclusivity, ensuring that rural areas have access to excellent education, and ensuring that the curriculum is relevant to the demands of business. Reforms are currently being actively worked on by the government and other stakeholders in order to address these difficulties and improve the overall quality of education across the country.

India's educational tradition is abundant and complex, drawing from both ancient knowledge and contemporary developments in the field. The contemporary educational framework continues to reinforce the importance of a well-rounded education, the development of ethical principles, and the acquisition of practical skills. The educational institutions of India play a significant part in the formation of the next generation of thinkers, inventors, and leaders, not only within the country but also on a worldwide scale, as India works towards becoming a knowledge-based economy.

Over the past two decades, the application of mathematics, which has traditionally been linked with scientific domains, has seen a surge in the number of applications in fields such as commerce and management. The idea that mathematics is only a tool for scientific analysis is being called into question by this change, which highlights the fact that mathematics has a wider range of applications as a language and a system for obtaining conclusions.

IMPORTANCE OF MATHEMATICS IN THE FIELDS OF COMMERCE AND MANAGEMENT

Mathematics plays a crucial role in these fields because it enables: Quantitative Analysis: It makes it possible to conduct numerical evaluations of corporate performance, financial trends, and market behaviour.

"Decision-Making" refers to the process of providing frameworks that enable individuals to make educated choices based on data-driven analysis. In the context of resource allocation and cost management, optimisation refers to the process of utilising mathematical methods such as calculus and linear programming in order to improve efficiency.

RESEARCH METHODOLOGY

The study has made use of both the primary data and secondary data. The primary data are directly collected from the field. A structured questionnaire was prepared and circulated among 75 samples who were selected from the village of Ankola Taluk of Uttara Kannada District. The district of Uttara Kannada is one of the coastal districts of Karnataka State which is considered to be one of the richest places in terms of education.

The secondary data were collected from various journals and magazines. Data were also collected from many web sites.

Objectives of the study:

The study was made with the following objectives:

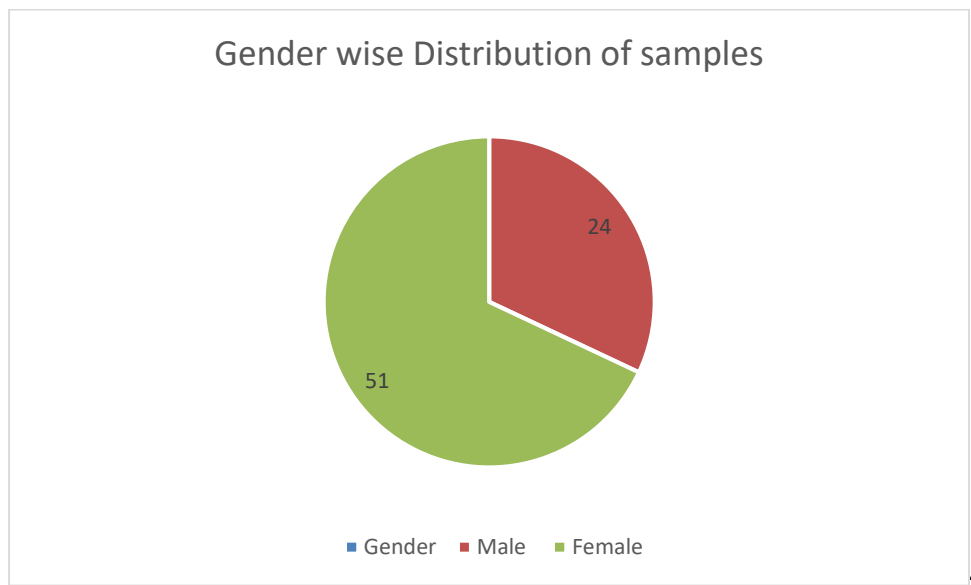
- ✓ To know the education system in India
- ✓ To know the role of Mathematics as a subject of study for the non-science students
- ✓ To analyse and conclude from the collected data

STUDENT PERCEPTIONS AND SURVEY FINDINGS

A survey was administered to seventy-five undergraduate students in order to determine their perspectives on the use of mathematics in various areas that are not related to science.

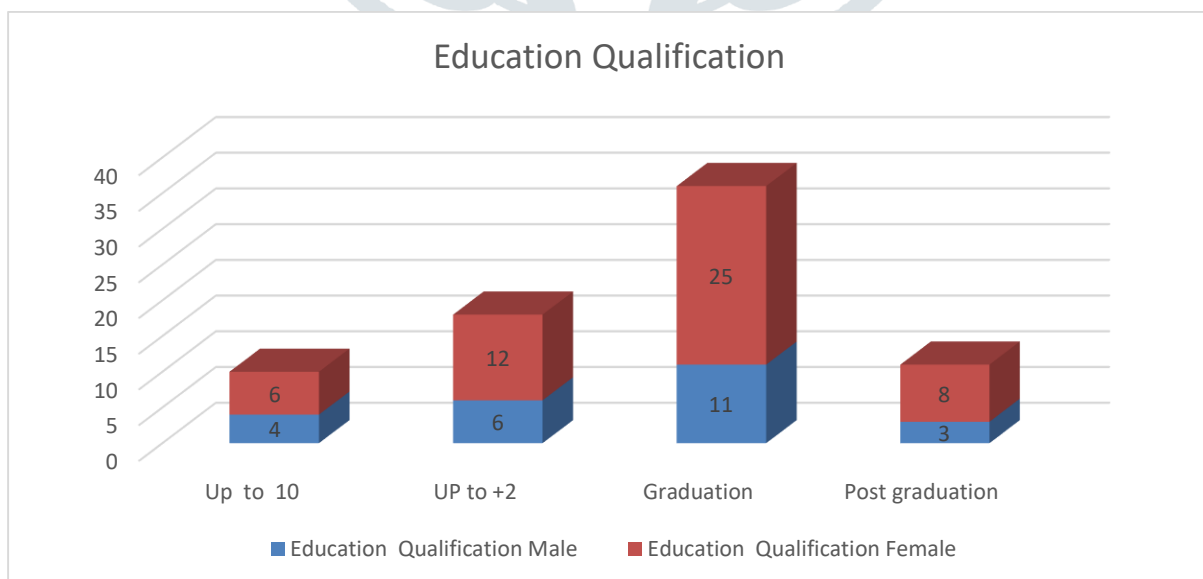
Various points of view were revealed by the findings:

Gender	
Male	24
Female	51



Out of the total 75 samples 24 were male and 5 were female. The study has made use of them to analyse.

Education Qualification		
	Male	Female
Up to 10	4	6
UP to +2	6	12
Graduation	11	25
Post graduation	3	8



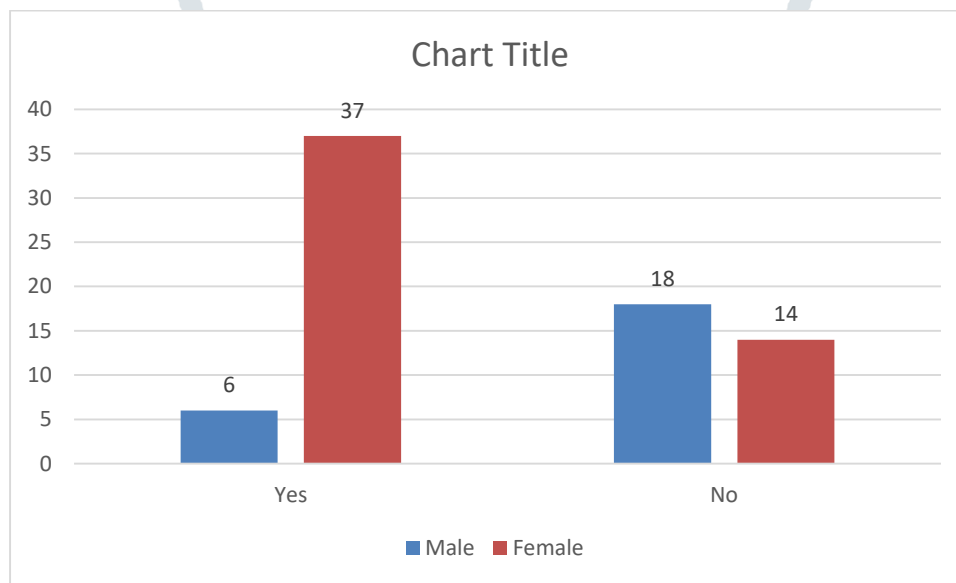
The educational qualifications of males and females across different levels. In terms of basic education up to class 10, there are 4 males and 6 females. Moving up to higher secondary education (up to +2), the numbers

increase to 6 males and 12 females. For graduation, 11 males and 25 females have attained this level of education, indicating a higher proportion of females at this stage. Finally, at the post-graduation level, 3 males and 8 females have completed their studies.

Concerning the necessity of mathematics in commerce and management education as well as its practical application, students reported varied degrees of ambiguity concerning the subject matter.

Perceived Difficulty

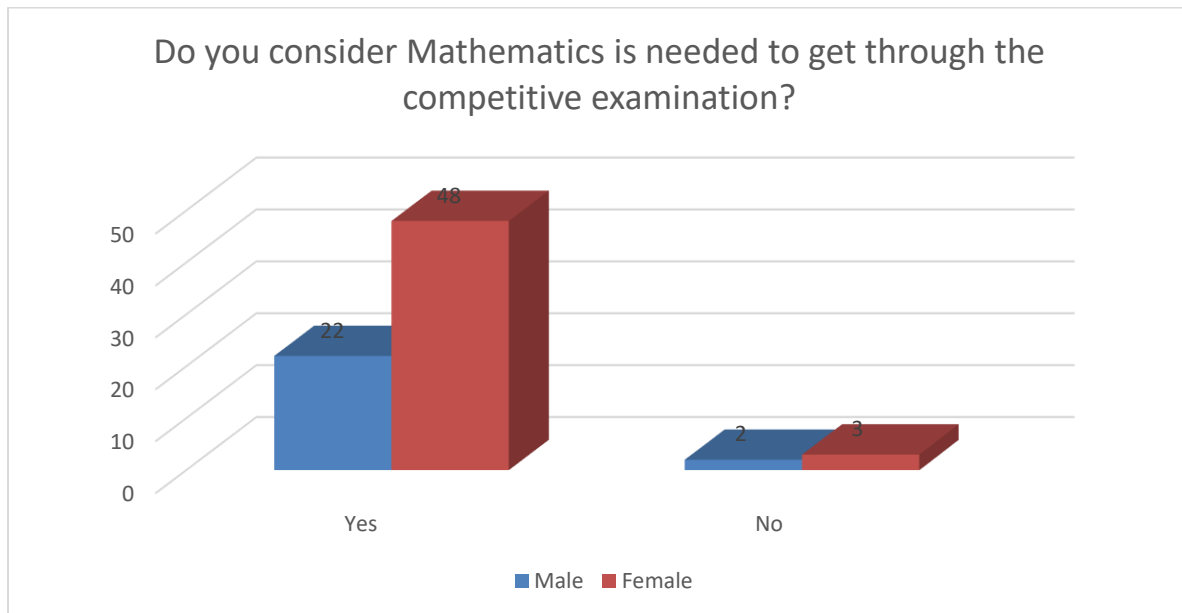
As a non science student do you like Mathematics		
	Yes	No
Male	6	18
Female	37	14



The preferences towards Mathematics among non-science students based on gender. Among males, 6 indicate a preference for Mathematics, while 18 do not. Conversely, among females, 37 express a liking for Mathematics, while 14 do not. This data suggests a notable gender difference in the perception of Mathematics among non-science students. Females show a stronger inclination towards Mathematics compared to males in this particular group. Possible reasons for this could include varying individual interests, teaching methods, or societal perceptions influencing attitudes towards the subject. Further exploration into these factors could provide deeper insights into the observed gender disparity in Mathematics preferences among non-science students.

When asked the question: Do you need to learn Mathematics for the competitive examination? A Contradictory answer has been given to the previous question.

Do you consider Mathematics is needed to get through the competitive examination?		
	Yes	No
Male	22	2
Female	48	3



The data provided indicates the perceptions regarding the necessity of Mathematics to succeed in competitive examinations, categorized by gender. Among males, 22 agree that Mathematics is necessary, while only 2 disagree. Among females, 48 agree that Mathematics is essential for competitive exams, with 3 disagreeing.

This data suggests a strong consensus across both genders that Mathematics is crucial for success in competitive examinations. The overwhelming majority in both male and female groups agree on the importance of Mathematics in preparing for such exams. This emphasizes the widely held belief that proficiency in Mathematics plays a significant role in achieving success in competitive academic assessments. The minimal disagreement on this matter indicates a general recognition of Mathematics as a fundamental skill set necessary for competitive exam preparation, regardless of gender.

CONCLUSIONS

In conclusion, the purpose of this research was to investigate the perspectives of undergraduate students with regard to the use and significance of mathematics, particularly in non-scientific disciplines such as business and

entrepreneurship. In spite of differences that are impacted by gender and educational background, the data demonstrated that pupils have a significant appreciation for mathematics. Since the beginning of time, India's educational legacy, which has its origins in ancient civilizations, has placed an emphasis on a holistic approach to education. This method combines academic rigour with moral and practical abilities. This foundation, which is highlighted by the Gurukula system and the contributions of intellectuals like as Aryabhata and Brahmagupta, continues to impact educational practices that are used today. India's education system is currently quite extensive and varied, and it is designed to meet the requirements of a wide variety of educational fields and fields of study. Although there have been great advancements achieved in terms of enhancing access and quality, there are still difficulties that need to be addressed, such as educational inclusion and relevance to the demands of industry.

The findings of the survey revealed that students who were not majoring in science had varying perspectives on mathematics. In general, ladies exhibited a stronger affinity towards the subject than males did. In spite of these differences, there was a general agreement among people of both sexes on the importance of mathematics in achieving success in competitive tests. This highlights the central role that mathematics plays in both academic and professional endeavours. As we move forward, addressing these observations could serve as a guide for educational changes that aim to improve mathematics teaching, foster greater inclusion, and align curricula with the changing demands of industry. Through the utilisation of India's extensive educational history and the adoption of modern educational approaches, the nation has the potential to better equip its future generations with the skills necessary to flourish in a globally competitive environment.

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