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## **Feature: Mathematics, an essential tool in many disciplines**

Mathematics is a subject with many benefits but is often not accorded the needed embracement for its full importance to be realized. It is of central significance to our modern society and provides the vital underpinning of the knowledge economy. It is essential in the physical sciences, technology, business, financial services and many areas of ICT. It is also of growing importance in biology, medicine and many of the social sciences. Mathematics forms the basis of most scientific and industrial research and development. Increasingly, many complex systems and structures in the modern world can only be understood using mathematics and much of the design and control of high-technology systems depends on mathematical inputs and outputs. It is therefore detrimental to the development of any modern society to neglect this all-important subject in its educational system.

Whilst many people side with the assertion that studying mathematics is tedious, I believe that our attention should be shifted more to its significance rather than its attended drudgery. After all, nothing good comes on a silver platter.

In fact, mathematics is more than just the science of numbers and abstraction but one that augments our education to equip students with skills necessary for achieving higher education, career aspirations, and for attaining personal fulfillment. Its significance is innumerable but we focus on the following.

### **Daily application**

Mathematics is not all about practicing calculations in algebra, statistics and algorithms that, after all, computers are capable of doing. It has to do more about how it compels the human brain to formulate problems, theories and methods of solutions. It prepares the student's mind to face a variety of simple to multifaceted challenges every human being encounters on a daily basis. Everyone, irrespective of your position in life and however basic your skills might be, you apply mathematics. The daily routine activities are all reliant on how to count, add or multiply. You encounter numbers every day while shopping, memorizing phone numbers, cooking, balancing a budget, paying bills, estimating petrol consumption of your car, measuring distance and managing your time. In the fields of business and economy, including the diverse industries existing around you, basic to complex mathematical manipulation is crucial.

### **Career aspirations**

The many branches of mathematics have their own distinct applications in the various careers. The skills acquired from its study such as analyzing patterns, logical thinking, problem solving and the ability to see relate different concepts help in the preparation for ones chosen career and enable the individual to compete for interesting and high-paying jobs against people around the globe. Even if you do not aspire to take up math-oriented job, you have the edge to compete against other job applicants if you have a strong mathematical background, as industries are constantly evolving together with fast-paced technology.

The acquisition of at least basic mathematical skills commonly referred to as "numeracy" is vital to the life opportunities and achievements of individual citizens. Research shows that problems with basic skills have a continuing adverse effect on people's lives and problems with numeracy lead to the greatest disadvantages for the individual in the labour market and in terms of general social exclusion. Individuals with limited basic mathematical skills are less likely to be employed and, if they are employed, are less likely to have been promoted or to have received further training.

### **Tool for all technological advancement**

Mathematics is employed worldwide as a key instrument in a diversity of fields such as medicine,

engineering, natural science, social science, physical science, business, commerce as well as ICT which has become the vehicle for the modern day development in every facet our society.

Its knowledge is applied in every field of study and industry to produce new discoveries and advancement of new disciplines. The various products of technology that man derives pleasure from is a by-product of Science and Mathematics. The ease and convenience people enjoy today from the discoveries of computers, automobiles, aircraft, household and personal gadgets would never have happened if it were not for this essential tool used in technology.

### **Analysis and Problem skills**

The reason why mathematics is all-embracing is the analytic and problem solving skills that it leaves the mind of those who pursue it. It enhances the student's logical and functional skills as well as the student's ability to understand abstract and complex problems.

Mathematical problems enable students to apply their skills to both familiar and unfamiliar situations. This gives them the ability to use tested theory and possibly creating their own before applying them. By developing problem solving strategies, students learn to understand problems, devise plans, carry out plans, analyze and review the accuracy of their solutions. The methods involved in problem solving develop use of reasoning, careful and reasonable argument, and making decisions. These are desirable skills of the human resource that any modern society striving for development cannot shy away from.

In summary, mathematics makes a significant contribution to our modern society; its basic skills are vital for the life opportunities of the youth; and it develops the mind and those highly valued cognitive skills required for scientific and technological advancement.

Let us all embrace and encourage the study of this indispensable subject.

Alfred L. Teye (alfredlarm@gmail.com or +31624121365)

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