

THE TEACHING OF SCIENCE AND ITS EFFECT ON SOCIETY

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INTRODUCTION

The broad teaching of science in the classroom, television, computer, mobile cinemas, mobile libraries, and newspaper opinions have made science awareness and usage a more common phenomenon in most countries of the world. The drive is to obtain a scientifically literate society and not all expertise. This article outlines how the teaching of science has impacted on society and the continual usage of the old media such as the classroom, mobile cinemas, mobile libraries, and newspapers. To obtain a scientific society information must flow globally, that is, between different countries, and away from developed urban, notable cities, rural regions, agricultural cities and towns. However, they should be a continual outreach to influential individuals, politicians and religious authorities.

How Science Teaching Affects Society?

Science nowadays, is compulsory for all students from elementary 1st form towards 3rd form of the secondary school after which streaming and specialization occurs. This in itself is a fundamental achievement because it exposes students to the basic concepts of science. Recently, the highly recognized universities and colleges have made it mandatory for all non-science majors or minors a general science course dealing with important life scientific phenomena.

At the elementary levels students are taught science as it relates to hygiene-such as why it is essential to have good grooming habits, a daily shower, as least twice daily brushing teeth, the importance of changing bed linen at least once a week, and if he/she is a bed wetter the mattress should be placed in a sunny, well aerated place for at least 5 hours no less than twice a week. In highly develop countries the bed can be treated chemically. They are taught the reasons for brushing teeth is to prevent tooth decay and bad breath. Grooming includes the washing of hair and skin protects against skin disease and lice. In regard to finger nails and toe nails, they learn that well kempt nails prevent against diseases and nail infections. The students at the elementary level are also taught the importance of a clean change of clothing at least once every two or three days the minimum. This type of training at the elementary level have gained great accolades because these young students (most of them) now smelling better and being better groomed than those of 70-80 years ago. The school nurse is now ready to enforce good hygiene.

At the secondary level science is taught in a two or three tier system depending on whether or not the secondary school has a 6th form. For the first two years of secondary school students are taught general science as introductory aspects that include general knowledge of the disciplines- Chemistry, Biology, Physics, Geography and Cookery-with hands on approaches that includes simple laboratory experiments that have made students of the experimental process of science while enhancing their theoretical learning. At the third form level there is the beginning of specialization for subsequent streaming for the 4th and 5th form levels to take general certificate examinations. However, it is still mandatory for third form students to take courses in chemistry, Biology, Physics, and Geography as introductory concepts. This means that if they do not pursue science to the higher level, they would have a general awareness of the basics of the four disciplines and can be deemed not illiterate in science. The continuation of science to the 5th form level means that such students are planning and being prepared for careers that require a science base. Six formers in science are pursuing the equivalent of a first year course at a university or degree college. This training for six formers get them better prepared for University or College while still in the school setting. Dissections of animals done in Biology laboratory experiments have initiated in students who plan to pursue

medicine as a career the love for surgery and emergency room service at hospitals. For other students, at the introductory level of science, the knowledge gained helped with their acknowledgement of the importance of science to society, in career choices and in nature. It should be noted that the curriculum explaining the teaching of science at the elementary and secondary level is based on the British and Caribbean educational systems.

The compulsory addition of the general composites of science to all admitted students curriculum at some noted Universities and colleges have reinforced the knowledge of and shows the importance of science to all in society. This means that even if the student's prior knowledge of science only reached the third form level of the secondary school the renewed emphasis shows its importance. The general composites taught at universities and Colleges include the following disciplines, namely, Biology, Medical Biology, physics, Chemistry, Geography, and food types-Cookery. Some universities have a core course called "Dialogues of Scientific Literacy" that combines relevant information from all disciplines of science to enhance the student's awareness of the fundamentals of science. Even though some careers do not require a science background this implementation of a compulsory science course at the University and college levels means that even if the prior knowledge of the students in science was at the third form level this additional training would make them more aware of health information, diseases, and possible treatments, over the counter medications, household medicine cabinets and in some cases first aid.

Individuals with this literary knowledge of science are more aware of the consequences of not cooking food (meat, fish) thoroughly and the diseases that can occur due to eating raw, medium rare meat and raw fish. They are now more comfortable questioning their health care providers. They are now more prepared and understand better natural disasters, and how to protect against damages and loss of lives. Some of them because of science awareness know safe habitats-outside frequent and regular disaster areas. They now know the difference between an epidemic spread of diseases and one or two cases that might be initiated through the broadcast media. They can now appreciate science writing in newspapers and simple teaching journals and can form opinions about what has been written. This has led to activism and fanaticism-some favorable, some not favorable.

Some students due to lack of lack of knowledge of their content level in science have deemed themselves specialists in the discipline because they have a first degree in the discipline. This is unfortunate because individuals versed in education know that they are not specialists with a first degree unless there is an additional science degree at a higher level. Students at the first degree level should consider themselves to have an understanding training and not a high specialty. For media interviews and discussions individuals with the relevant specialty at the Doctorate and published level should be used. All other individuals are not acceptable from a science perspective. Science teachers at the secondary level could be interviewed on aspects that relate to the teaching of science at the secondary level.

Individuals initially trained in science have switched disciplines at the higher levels to become top performers in disciplines such as accountants, managers, medical doctors and lawyers-the most significant switches. Some lawyers trained in science before entering legal profession have become Judges and are often given cases to adjudicate that requires a comprehensive knowledge of science.

Managers of manufacturing in the arena of food as a specialty who were trained in science before entering management are often happier than others to recall food items which have been defaulted. Such individuals because of their training in science would fear food poisoning whether it may be chemical or microbial and could lead to an epidemic. This also illustrates the importance of batch numbers in manufacturing. The spread of diseases that might occur through the canning and bottling processes are also better understood by such managers.

Agricultural planters with a prior knowledge of science also know the importance of applying fertilizers, the effect of excess chemical fertilization on water systems through their run off, and that they should be careful with the application of pesticides due to harvest times. The application of pesticides too close to harvest times means that the pesticides might not be degraded below the toxic levels of man and can cause

chemical poisoning to epidemic levels. They also understand the possible effects of harmful microbial contamination on their food crops.

Food handlers in restaurants and hotels all taught basic health –medical and hygiene methods –for the preparation, storage, and service of food. Some countries have national certifications for such food handlers. At least one individual in each food entity must have a National Certification before acceptance in licensure to serve customers in the cookery industry. This type of training has led to a reduction of food borne diseases in most countries, although outbreaks sometimes occur. The use of thermometers are helpful tools to food handlers since it temperature is very important to the preparation, storage and service of foods. As a result, food handlers must have a knowledge of science to differentiate readings on temperature gauges and thermometers. Such a knowledge is obtained in the first year of secondary school and 6th grade in 7th grade schools.

From a medical perspective the use of chemical instrumentation, microbiological plating and analysis, and biochemical analysis have led to better, faster and reliable tools for most diseases-microbial, chemical or genetic. It should be noted that such analyses are normally done in urban cities and sub-urban university towns. In some rural areas medical treatment is administered by the medicine man or bush doctor.

In this modern communication age with jet travel the teaching of geography in secondary schools has led to an awareness of the world, through different climate regions, the distribution of people, agriculture and crop types, the natural disasters prominent to certain regions, and the dress code used by certain individuals in different regions of the world. Basic geography teaches map reading which helps individuals with travel from region to region in large countries and location of countries around the world. The teaching of the globe also helps in this regard. Knowledge of locations where natural disasters occur frequently have allowed individuals to build structures for survival during and after disasters.

The applications of physics have led to technological advances both mechanical and electrical. Technological advances have led us away from the horse cart to the bicycle and fuel powered motor vehicles, electric bicycles and other vehicles, from the lamp and burning fire to electric bulbs and stoves, from the icebox to the refrigerator, from the telegraph to the telephone and from the typewriter to the computer and lately to the internet, teleconferencing and television and telephone connection through the satellite system. The satellite system has given us live picture news broadcast, and educational programming from countries and regions far and near. This development of live satellite information have afforded live broadcast in war zones and made next day newspaper reporting seems obsolete.

The technological advancement that brought about 24 hour television programs- many focusing on children- and is not very educational, has led to television addiction in many countries and therefore students/ individuals are doing less reading. The Nintendo and computer games also have a negative effect on reading. Students who have become addicted to Nintendo and computer games tend not to do enough reading and very often their school assigned homework is not done.

The old regime of mobile cinema and mobile libraries should be reinstated in rural agricultural areas and distant places without libraries and adequate television programming to encourage reading, present educational information and documentaries. Newsletters of importance to agriculture, medicine, science and other educational disciplines could be sold or loan mobile cinema and library systems. The use of mobile cinemas and mobile libraries should reinstate the importance and the use of adequate educational television programming focusing on the elderly and youths in our societies.

Relevant issues based on the development, improvements, restructuring, and educational options of a country known to politicians and soon to be implemented or being implemented should be written in a publication known as the official gazette which should be distributed to individuals for free or a small fee. This is better than the free media which initiate debate and slow the process of implementation. Scientific issues of concern to the country and known to politicians could also be written in the official gazette and distributed through the mobile cinema and mobile libraries. This would encourage reading and, in many cases, more informative than argumentative television and radio broadcasts.

CONCLUSION

The teaching of science in such a manner that all students are taught at some time in their educational career has greatly improve the literacy of science in most modern societies. Some abuse of technological advances has led to an addiction which is detrimental to reading as a way of learning in some societies. Despite the many technological advances it is still appropriate to use the old media such as the newspaper, magazines, mobile cinemas and mobile libraries. Although there have been many advances in science over 70% of the world population still depend on plant medicine and the bush doctor for their primary care. This percentage should be unacceptable in this era and there should be an effort through the World Health Organization to reduce that number to around 50%. It should be a gradual process that includes education.

Despite our achievements in scientific awareness the corona virus pandemic has shown that with regard to influence on the society politics still has a greater reception even when science should take the lead. It should be reiterated that in the process of treatment and prevention of the corona virus infections science should have the final say and not political, economic or religious opinions. The advent of the world's corona virus pandemic has shown that there is still a great need for the improvement of knowledge transmitted so that our civilization would have a greater respect for science. Simple chores such as washing hands, wearing facial coverings (masks), social distancing and avoiding large gatherings has been taken far too lightly by the civilization and has resulted in an uncontrollable spread of the disease. Political influence has vastly eroded the respect for science and this true for the corona virus pandemic. This political influence through opinions has spread via the global media to “all” countries of the world. One can slow the spread of the virus by carrying out the above guidelines but they seem too difficult for many to perform. It seems that many individuals are willing to sacrifice themselves, their love ones, work mates, neighbors and their social clique. Religion, Politics, and economics are disciplines where respect for science needs to be achieved. This can only be done through comprehensive education.