

Science and Technology: The Social Impact on the Society

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Abstract

The world is growing at very fast rate with regards to communication technology in science processes and methods. Science and technology are not only tools but also vehicles for all round development of any nation. For any nation to attain science as a sustainable development, there is need to recognize science education as a priority area of education for her citizens because it helps to develop creativity, improve scientific and technological literacy of citizens, prepare citizens for an active contribution towards their culture, and inculcate the spirit of scientific thinking in the citizens. Therefore, to a very great extent, the level of scientific and technological development of any nation determines the standard of living of the citizen of that nation. For this, any nation that does not develop scientifically and technologically will continue to dwarf among the developing and the developed nations. There are therefore needs to encourage co-operation between the social and natural sciences, draw lessons from humanities and local knowledge.

Keywords: Science, Technology, Education, Society.

Introduction

Science and technology has become an integral part of human culture in contemporary times. It is reflected in day-to-day activities. Technology has gone a long way in the society. Adedojoh and Tse (2016) stated that millions of people around the world with access to internet are members of one group or more social networks. They have a permanent online presence where they create profiles, share photos, share their thoughts with friends and spend hours

catching up with their friends which was brought about by technology. Science and technology have positive and negative impact on the society. Among the benefits are: access to information, economic and political gains. However, the negative impacts include time wastage, poor academic achievement. (Bongie, 2013).

Considering the facts that the world is fast growing towards science and technology, there is therefore needs to know their impacts on the society.

What is science?

Jegede and Omotayo (2016) define science as intellectual activities through which man seeks to understand nature; it is the systematic study of nature. Science is an endless discovery, a continuous venture into the unknown, a quest to know and understand the world. Science has been regarded as the bedrock of modern day technological breakthrough is built. Nowadays, countries all over the world, especially the developing ones like Nigeria, are striving hard to develop technologically and scientifically, since the world is turning scientific and all proper functioning of lives depend greatly on science. It is a dynamic human activity concerned with understanding the workings of our world. This understanding makes man to know more about the universe. Without the applications of science, it would have been difficult for man to explore the other planets of the universe (Ogunleye & Adepoju, 2011),

Meaning of Society

A society is refers to the aggregate of people living together in a more or less ordered community. It is a group of people involved in persistent social interaction, or a large social grouping sharing the same geographical or social grouping sharing the same geographical or social territory,

typically subject to the same political authority and dominant cultural expectations (Wikipedia, 2014). The nature of a society directly determines the status of science in that society. Seweje & Jegede (2005) opined that an illiterate and highly superstitions society will give very little attention to growth and development of science in that society which will also determine the level of scientific activities within the society.

Adegun (2003) defines society as man's environment, where the man lives or interacts. It consists not only of man's physical environment but also other individuals with which they interacted together. A society at the same vein could be a persisting through generations and relatively independent of other societies which could be elephant society, American society among others. Adegun further classified societies based on – level of technological advancement and variety of people that inhabit it.

Technology

Technology is the application of scientific knowledge for practical purposes, especially in industry. It is also an application of science to solve a problem. Technology is the application of skills and knowledge for practical purposes by which the people

control and modify its systems, processes and development (Salvie, 2005). In the 20th century, there has been a scientific revolution which has touched all aspects of life sciences. Information and communication have already turns the world into a global village in which science has also been a key factor (Nneka, 2012).

Technology refers to computer and internet facilities used to handle and communicate information for the society (Yahya, Gana & Ibrahim, 2016). Science sets out what could be done while technology shows how to do it. Technology is a problem solving process; it is dynamic, innovative and evolutionary. In modern times technology has become mankind's main enterprise. Technology produces know-how while science produces know-what (Olaofe & Awokunmi, 2010).

Many nations in both developing and developed countries realize that technology literacy for all their citizens play a crucial role in the socio-economic strength which is considered to be the main reason for the rise in the technology curriculum movement resulting in massive introduction worldwide, of science study programmed for all ages of school children (Hofstein & Lunetta, 2003). Education if well planned and properly directed is the key to success and progress

especially in Nigeria therefore, no nation can boast of being democratic, self reliant and buoyant without integrating technology in their education system. Today's child lives in a technological world, a world of technological revolution; such child watches television and video, uses CD, VCD and DVD which has made the child to become influenced in various ways through these media and some of the programmes associated with them (Okoyefi & Nzewi, 2012).

The development of any nation could be a measure of her development in the area of science and technology. This is because the technological growth of a nation leads to its social and economic development. The development in science and technology has been the most effective factor in enabling less developed countries to enter the mainstream of contemporary technology and commerce. Science and technology as well as their teaching through formal and non formal education are essential factors improving the material and cultural conditions of people's lives and are objectives of cultural development. Technology is the practical method which has enabled human beings to rise above the animals and to create their habitat, food supply, comfort and means of

health, travel and communication (Yusuf & Afolabi, 2010).

Science and technology are day to day activities that help in areas of education, agriculture (to provide the food we eat), in making the beds, in building the houses, in making the cloth, in transportation and had greatly made communications faster and more importantly organize the daily lives. Science and technology are veritable tools of national development and economic empowerment. While technology uses science to solve problems, sciences uses technology to make new discoveries. The global trend in this era is a race toward the emergence of e-society, a society driven primarily by digital technologies and a building block of modern society (UNESCO, 2003). Science and technology are not only tools but also are vehicles for all round development of any nation. The level of scientific and technological development of any nation determines the standard of living of the citizen of that nation. For this, any nation that wished to be recognized globally must ensure she is sound fated in science and technology. The importance of science and technology to any nation not only a matter of measuring up to the present scientific and technological level but also include improving on the attained level.

Education and Society

Education is regarded as one of the instrument of change. It is the construction of event that composes the lives of individuals so that new happenings and new events become more purposeful. Akindutire (2004) submitted that if education is developed and rightly used, it will make a better society because:

- a. education exists to create in individuals certain kinds of attitudes desires by the society;
- b. it is an agent of social mobility, causes change in literacy level and in standard of living;
- c. it leads to growth of the industries and social changes that accompany it;
- d. education fosters social change in the form of independent thinking and political movements. It is an essential instrument of democracy;
- e. research used in solving human problems is a form of social change brought about by education. Increased accumulation of knowledge is the basis of modern technology;
- f. social change in form of new modes of dressing, religion and marriage came to Africa through education;

- g. agricultural changes provide evidence of the role of education in causing social change.

Education is a tool for achieving science and technological advancement for effective building of the nation. Science and technology education is a type of education required by all citizens because of this, the government is laying emphasis on it for even in the schools today (Umeoduagu, 2000). Education is the leading out of the in-born powers and potentialities of the individual in the society, and the acquisition of skills, aptitudes and competencies necessary for self-realization and coping with life's problem (Oburu, 2012).

Roles of Science and Technology in the Society

Nearly everyone is a proud owner of some form of technology. The level and technological development of any nation determines the standard of living of its citizen. Igboegwu & Ikokwu, (2012) submitted that science is for life and technology the bedrock for societal growth and transformation. Some of the impacts that technology has on the society according to Okhuese (2016) are:

1. ***It fosters education:-*** the use of electronic media in teaching has contributed greatly to improvement of education in our societies. It is impossible to imagine searching through countless stacks of books, scouring pages for snippets of information to complete assignments and homework which can be opened up on internet tab and Google or yahoo in less than two seconds. We have e-learning, e-library etc. which promote supportive and interactive teaching and learning and hence, enhance the tools and environment for learning;
2. ***It is the basis of our global society:-*** the use of internet, twitter, Facebook or live messenger in communication has negate the time when string of a cup between windows were used to talk. It expands students' reality through the use of videos and video clips; students can be present at events that they would never be able to attend;
3. ***It aids critical thinking:-*** Steve Jobs opined that everybody in his country should learn how to program a computer because it teaches you how to think;

4. **Healthcare:-** technology has helped in healthcare in the area of drug production and administration, healthcare delivery, surgeon among others. Some sophisticated equipment is now available which are due to science and technology;
5. **Transportation:-** in the olden days, the only means of transportation is by trekking but with the aid of science and technology, people can now move through vehicles, motorcycle, plane, boat among others which are brought about by science and technology;
6. **Industrialization:-** in the industries, technology has led to high production of goods and services. What was supposed to be produce at smaller quantity are now been produced in a larger quantity due to the use of machineries rather than mere manual labour;
7. **Agriculture:-** science and technology has helped in the place of agriculture most especially in the areas of hybridization, improved yields, fertilizer applications, use of tractors etc;
8. **Security:-** technology has helped in the area of security. For instance, the invention of CCTV to monitor the movement of people in and out of the Bank environment and some other important places;
9. **Entertainment:-** technology had helped in entertainment most especially in theatre and music industries;
10. **Infrastructure:-** the provision of social amenities such as electricity, pipe-borne water, healthcare delivery, good roads among others was due to the integration of science and technology;
11. **Sport:-** advances in technology have had a profound impact on sport. This includes the analysis of sport performance which enable coaches improve the quality of feedback to players/athletes, it increases accuracy in time measurement of sport performance, it enables referees, umpires and sport officials to make better decisions on rule infringements, improvement in the design of sport equipment and apparel and in providing spectators with better viewing of sport performance.

Negative impacts of science and technology on the society.

A capsule review of literature by Bongie (2013) revealed the following as the negative impact of science and technology on the society:

- a. **Pollution:** land, noise, water and air pollutions are the types of pollution that can occur as a result of technology. Some activities such as disposal of vehicle parts into the lands, killing of aquatic organisms with the use of chemicals, citing of industries near residential areas, and escape of gases into the atmosphere in many of our industries causes pollution which in one way or the other affects the standard of living of the people in such areas.
- b. **In medicine:** illicit consumption of drugs like heroine, cocaine and some others affects the society. Also, if drugs are not taken as been prescribed by a physician, it can leads to death of the person that takes such drug most especially the illiterates in the society that doesn't know how to read and write.
- c. **Fraud:** science and technology has made some people to engage in fraudulent acts. Some people engages in yahoo using the internet to dupe people, money can be taken away

from another person's account once they know the person's contact/pin, some uses their phones to tell lies among others.

- d. **Natural disaster** such as global warming, depletion of the ozone layer, earthquake, tunado, volcanic eruptions, acid rains among others are caused by technology.
- e. **In agriculture:** some agricultural activities affect the society. For instance, inappropriate application of fertilizer as manure affects health status of people, the use of insecticides and pesticides as well as burning resulted in the killing of some micro organisms that are supposed to nourish the soil.
- f. **In Education:** science and technology has lead to laziness on the part of the students. For instance, some student cannot do simple arithmetic without the use of calculators, they do not like reading books but rather they prefer watching films and listening to music, going into the internet to Facebook, To-go and to chat with their friends neglecting their work. Some people engage in examination malpractices via the internet.

Conclusion:

Science and technology has contributed immensely into the society; there were negative and positive impacts on the society. Individual in the society needs to be educated on the positive and negative impacts of science and technology on the society so as to make the environment more conducive for living.

Recommendations:

Based on this study, it is therefore recommended that scientists and scientists institutions should:

- a. Promote multidisciplinary approaches to research, encourage co-operation between the social and natural sciences, draw lessons from humanities and local knowledge
- b. Encourage holistic approach to problem solving for socioeconomic conditions
- c. Fully exploit the predictive power of science to serve social needs with the awareness of the limitations of scientific predictions
- d. Encourage the creation of science-coordination mechanisms at the highest level involving the governments of all countries as a way

to promote integrated responses to global problems.

In order to maximize the gains, it is important to educate the society on its benefits as well as its adverse effects.

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