

IMPACT OF NEUROCHEMISTRY EDUCATION ON GLOBAL PEACE AND DEVELOPMENT

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Abstract

Creative brain is central to human existence and its maintenance is of a paramount issue to the global peace, security and development. The preceding assertion can be achieved through neuroscience which is the science that has to do with substances that affect the brain especially, the cerebral part of the brain that determines the intelligence of organism which deals with how organism interacts with each other in their ecosystem. Many studies have linked low levels of the neurotransmitter serotonin to depression, impulsive and aggressive forms of behaviour, violence and even suicide. Neurochemistry literacy can help control these forms of behaviour by educating people on danger of low serotonin to avoid getting into acts capable of causing conflict or breakdown of law and order. This study further x-rays the place of neuroscience especially neurochemistry as an aspect of knowledge through which creative brain conveys its numerous gifts and blessing to humanity. It also highlights challenges facing neurochemistry and recommends possible solutions.

Introduction

The brain communicates with itself by sending out chemical information from one neuron, or nerve cell to another. Neurochemistry also known as Brain chemistry is the sum of all the chemical messaging that takes place in the brain, which allows it to carry out its daily functions, such as generating movements, speaking, thinking, listening, regulating systems of the body and countless others. Many studies have linked low levels of the neurotransmitter serotonin to depression, impulsive and aggressive forms of behaviour, violence and even suicide (humanillness.com).

Education is the main tool of all round development of people, society and nation (Jha and Singh, 2016). It is a process by which a student reasons, feels and acts, which influences his attitude and disposition (Ucheaga, 2015). The quality of education of a nation to a great extent determines the quality of life, relationship with people, peaceful co-existence and even contribution to national and global development.

Chemistry is one of the processes, science uses to understand nature and human existence. The brain is central to human existence and paramount in evaluating the standard vis-à-vis

quality of education (Ucheaga, 2015). Mohammed (2017) asserts that “information is the oxygen any government requires to succeed”.

Neurochemistry is one of the processes with which we receive information that helps us live healthy and peaceful life. The brain is a carrier, channel and vehicle through which information gets to a great mind (Ucheaga, 2015 cited in Samwaad, 2016).

Research has shown that cannabis (marijuana’s) negative effects on attention, memory and learning can last for days or weeks after the acute effects of the drug wear off depending on the person’s history with the drug. Consequently, someone who smokes marijuana daily may be functioning at a reduced intellectual level most of all the time (Powledge, 1994 and Novitt-Moreno, 1995), but brain literacy can proffer solution. Brain literacy can help control these forms of behaviour by educating people on the danger of low serotonin, to avoid getting into acts capable of causing conflict or breakdown of law and order. It has been tested and attested that when “antidepressant” known as a selective serotonin reuptake inhibitor (SSRI) was applied on a patient called Hector his depression problem was solved by increasing the amount of brain neurotransmitter (Powledge, 1994 and Novitt-Moreno, 1995).

The axiom that neurochemistry impacts on global peace and development is justifiable because the ultimate goal of neurochemistry is brain literacy, a healthy brain contributes significantly to national and global development but an insane brain does not and that is why there is a popular maxim even among intelligentsia that health is wealth.

Health and wealth are two sides of the same coin. A person who is healthy can go the whole yards in investing time and energy into material attainment and happy living (Cally, 2012). The maintenance of healthy brain is of a paramount issue to global peace, security and development. It is only healthy brain that can be creative and invent new ideas, which will help man to proffer solutions to his present needs without compromising his future needs.

Carson (1973) cited in Williams (1997) asserts that “neurotoxins that do not directly impair the intellect can impact indirectly school children who become distracted, disorganized or frustrated or who cannot follow simple instruction”. If the productive sector of the economy is disorganized or frustrated there will be no peace or national growth.

Objective

This paper was designed to:

1. Explain the benefits of creative brain both to nature and man
2. Describe the nexus between peace, communication and security.
3. Explain the role of neurochemistry in maintaining global peace, security, human and national development

Understanding the Nexus of Peace, Communication and Security for National Development

Studies on security, communication and peaceful existence have shown that Science, Technology and Communication are the fulcrum upon which peace, security and national development pivot. Hardly a day passes without the electronic and print

media discussing and reporting security issues and threats to national development. Security experts have maintained that the use of explosives (atomic bomb)

(Trinitrotoluene, hydrogen bombs, etc) to express grievances or propagate ideological thought were alien to our culture, but failure of our leaders, security agencies and political activators to proactively manage local problems that were self-contained is one of the reasons for our recent ordeals and plight in the hands of terror groups (Penguin, 1966 cited in UNESCO, Federal Publication, 1977; and Ejiofor, 2016).

Osarefe (2016) asserts “that bringing peace together on a table, that is, dialoguing with terror groups and militants is a better way of resolving conflict and usher in peace than apply force”. Today our problem has taken new dimension to become world problem. Some people say our security problem has its rhizome on fundamentally irreconcilable religious vices rooted in deep distrust between the two major religions in the country, Christian and Islam. Some school of thoughts believe that it is not mere disagreement hinged on religious ideology that it has political connotation; for disagreement presupposes that parties have something in common to disagree about. Insurgency is rather a matter of ‘ideological movement based on religious bigotry’ which is foreign to two major religious faiths and also alien to Nigerian nation because it excludes discussion and dialogue. Other school of thought believes that marginalization from ‘national cake’, neglect of proverbial Golden fowl that lays the golden egg, lack of sense of belonging and exclusion of some ethnic nationalities in the major scheme of affairs are some of the reasons adduced for the various agitations in

Niger Delta. Kudos to the 2014 National Conference which has authenticated the preceding assertion because both Moslems and Christians were in attendance Obeying the Golden Principle of One Goal One Purpose One Destiny (OGOPOD), seeking for a common platform to stand to improve the lives of Nigerian citizenry despite religious divide.

Security experts have argued that we cannot achieve peace with faceless individuals. That is people who are agitating for something but do not know what they want. Our national peace is hindered not only by fragmentation of thought and knowledge but by information disconnect (communication barrier) between our leaders and their followers. Our leaders are out of touch with the citizenry, distrust between security operatives and the public. Distrust across religious divide and ethnic nationalities that make up Nigeria.

A society that lacks effective culture of communication lacks coherent peace, development and existence. Security Technology and Response (STAR) is not parochial or stereotype but multidimensional and requires proactive and innovative approach to security issues so as to yield the required result and confidence. Our security problems are no longer as a result of professional military ineptitude, insulated, isolated and localized approach to security issues. It is now a global concern and needs global attention. Therefore, we must be proactive. In order to be active, it involves increasing interrelations and needs complex and sophisticated information, communication and science technology to overcome. There is nothing more discouraging, frustrating and threatening when citizens cannot repose confidence in security agency and in the same

manner security operatives cannot establish understanding with the people. They should instill confidence in the people they interact with by not divulging information at their disposal thereby putting the lives of the informants in danger. There is nothing more frustrating than trying to deal with an organization 'terror group' where one cannot get hold of anyone who will talk to one on a man-to-man basis and even when such provision is made the person who offers to arbitrate is sometime seen as a compromise and viewed as a security threat to national development. Because of the preceding assertion a person with the relevant information to help security operatives to fight crime is sometime reluctant to offer such help.

Our security operatives need closer relationship with the people, it goes beyond the police slogan, 'police is your friend' to more proactive, technical and have means of communication, more sophisticated arsenal to enhance their competence in combating crime, insurgency and to gain more confidence among the public. Security issue in Nigeria now is a global phenomenon to climate issues and should not be treated with levity. Every human, industrial, ecological and environmental problem and solution starts and ends with human brain. No wonder it is referred to as terminus brain (Williams, 1997). The brain should be properly funded in form of research and development. They should have edge over the terror groups in terms of information gathering and dissemination, sophisticated arsenal in order to enhance their competence.

Effect of Neurotoxins

Neuroscience is the field of study that deals exclusively on the brain and its functions.

Neuroscience is such a diverse and versatile branch of knowledge that talks about micro-organisms and chemical substances that can either hamper or facilitate the progress of normal brain development vis-a-vis functioning. Some of these elementary structures are grouped into neurochemistry and neurobiology, for proper definition and definite study such structural elements are grouped into chemical substances and organic substances. Therefore, the study of such chemical substances that affect the brain either positively or negatively is referred to as neurochemistry while on the other hand the study of such organic substances mainly organisms with their interactive process and environment is conveniently studied as neurobiology. Also, some specific chemicals that are toxic to the brain cells and tissues are called neurotoxins while their corresponding chemicals that positively enhance the normal functioning of the brain are called Neuropeptins. Neuropeptins are such elemental substances that are either taken as food or drug in order to improve the proper functioning of the brain, some of these chemicals are Iron, phosphorus, zinc, iodine. The neurotoxins endanger the normal functioning of the brain. They are lead, mercury, iron (iii) ion, carbon (iv) oxide, carbon(ii)oxide, chlorine, lead, Mercuric Iodide, Zinc phosphate Compounds. They are also referred to as neurodegenerative chemicals (neurotoxins) causing neurodegenerative diseases (US Center for Disease Control and Prevention, 1991 cited in Williams, 1997).

The linkages between peace, security, national development, human survival and intellectual potential are usually restricted to discussion of the improvement of human resources through chemical education.

Human brains do not develop as a result of the natural selective advantage of passing examination. Nor indeed so that we could perform any of the feats of memory and other mental exercise now explicitly required for education. Educational and social influences are very important to the development of brain, but the primary factors influencing the potential of the brain are chemical and biological. No form of education or social intervention can mend damaged brain cells (Lovelock, 1979 cited in Williams, 1997).

Problems Impeding Development of Neuroscience

Limitation of natural instinct beyond the physical lies within the power of invention. A physical man does not understand nature and nature on its own is encompassing, which implies as it affects human development. No insane person can contribute positively to human development. By action of a sane person he can use the inaction and also action of insane person to project and propound theories that can positively impact favourably to nature. Brain is the problem and solution to man's development, peace, security, existence and exit.

Security Impact of Oil Production in Nigeria
Science education has made us to understand the public relation of multinational companies use to endanger our lives. Our cultural and socio-economic existence have been positively and negatively modified since the discovery of oil in 1956 by the Angola Dutch group, Shell D'Arcy in commercial quantity at Olobiri town in the Niger Delta region of Nigeria. The argument is neither here nor there, myth or reality, the country's sover indulgence in oil has been a bane to our socio-

economic growth. (Akpuh, 2013) and poses security threat to Nigerian citizenry (Ogochukwu, 2005). A study of environment and security implication of oil production in Nigeria revealed that in 1998 Shell identified the cause of oil spill as "pipeline failure" in 110,000 bpd oil from stations. Gas flaring increases the formation of aerosol and the level of Polycyclic Aromatic Hydrogen (PAHs) in Niger Delta due to oil exploration. PAHS are group of hundreds of organic compounds which contain two or more fused aromatic rings made up of carbon and hydrogen. They are known environmental pollutants formed by the incomplete combustion of organic materials like wood, coal or oil.

The oil companies in Nigeria have legitimate interest in ensuring security of personnel in flow stations, and pipelines and other oil facilities on the other hand Nigerian government has legitimate interest to exploit its oil resources to protect the operations of its joint venture partner and to ensure that the oil companies themselves protect those operations. For these reasons, security agreement between the oil companies and the Nigerian government is inevitable for peaceful coexistence and social economic development of the nation (Ogochukwu, 2005).

Conclusion

We cannot in any way underscore the relevance of creative brain in the development of any nation in the same vein one cannot over look input of neurochemistry for effective functioning and nurturing of creative brain. Like terminus, brain is the 'alpha' of our mistake; political, security, educational, social, economic, religious, communication, scientific and technological and the 'omega' of these

mistakes and their solution. It is paradoxically like two edge sword for defense and destruction because the brain can invent ideas to improve standard of living of man in the same vein it can also invent ideas that can annihilate humanity. If we get it right with creative brain through the study of neurochemistry, we shall get all the challenges facing humanity right, including security, peace and national development.

Recommendations

The following recommendations are made;

- The funding of human brain should logically be priority of policy makers during legislation for science education, information and communication technology development.
- Curriculum developers should develop model that would encourage transformational chemistry teaching.
- Science education, curriculum reformers and transformers should emphasize on the study of neurochemistry in Nigeria because of its relevance to education, security, peace, social and other parts of human development.

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