

**THE ROLE OF WOMEN SCIENTISTS IN EDUCATIONAL MANAGEMENT, ENVIRONMENT  
AND CLIMATE CHANGE. IMPLICATION FOR EFFECTIVE CLASSROOM MANAGEMENT**

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**ABSTRACT**

*Environment and climate are some of the most global environmental challenges usually faced by man with diverse impact on education, health, agriculture and livelihood. Because of relationship between human beings and the environment, women scientists became critical agents of environmental conservation, sustainable development and adaptation to climate change. This situation demands that everybody must be involved in checking this threat as quickly as possible so that our educational system will not be jeopardized. The paper dealt with the role of women scientists in educational management, environment and climate change; causes of climate change. It examined effects of climate on the environment; Implication of the effects on climate change on human health, teachers' roles in classroom management under climate change conditions including the implications of climate change in classroom management. The study recommended among others, that women scientists should be positively involved in educational management during climate change.*

**Keywords:** Educational Management, Environment, Climate Change, Classroom management in climate change, Teachers role in climate change.

**Introduction**

Education fosters the worth and development of individuals and the society. It is an instrument for national development; to this end, the formulation of ideas, acquisition of knowledge, the integration for national development and the interaction of persons and ideas are all aspects of education. Nwabueze (2011) stated that education is an instrument for positive and functional development of the individuals within a given society.

Educational management which takes place in an environment is critical for the successful achievement of educational goals and objectives as a result of climate change. It will be a waste of time getting into why women scientists need to properly and religiously manage education in climate change. Educational management therefore could be means of achieving educational goals through planning, communicating, executing and evaluating involved in running a school. The goals of education cannot be achieved in a vacuum; thus, an enabling environment is needed. The Glossary of education Reform (2013) referred to the teaching and learning environment as the diverse physical location, contexts and cultures in which students learn.

Thus, a manager of education which can be women scientist may be a teacher in the classroom, becomes an overseer of classroom jobs. Climate change is one of the threatening global environmental issues of our generation. Wikipedia (2019) sees climate change as the difference in the Earth's global climate or in regional climates over time. These are very harsh weather, fierce wind that blows off classroom roof,

flooding that stops school children to school and even drown some school children. Even though Nigeria is least responsible for climate change, but it influences classroom teaching and learning in Nigeria. Generally, the impact of climate change affects all levels of economy in Nigeria; such as education, agriculture, water and coastal zones.

For this reason, environment and climate change adaptation has remained very important in all global sustainable development agenda of government at federal, state and local levels.

### **Causes of Climate Change**

There are two major causes of climate change: The natural causes and the human causes. According to Norgaard (2010) the earth's climate is influenced and changed through natural causes; namely volcanic eruption, ocean current, the earth's orbital change, solar variations and plate tectonics.

**Volcanic eruption:** This occurs when magma is released from the crust and middle of the earth to the environment. It allows lava, rock fragments and gases to escape from layers beneath the earth's surface causing atmospheric cooling.

**Ocean current:** It acts much like conveyor belt, transporting warm water across the planet. It regulates interactions between the ocean and environment, circulating cold water and may affect the climate through the movement of Co<sub>2</sub> into and out of the atmosphere (Norgaard, 2010).

**Earth Orbital Variation:** The earth does one full orbit around the sun every year. If tilt changes, it can lead to small but important climate change in the strength of the seasons. The earth will have warmer and colder summers if tilt is more but winter in a less tilt.

**Plate Tectonics:** The earth is divided into small number of plates which has to do with the position of the continents, and determines the geology of the oceans and influences pattern of the ocean circulation. The location of the ocean on the continents determines the control in the transfer of heat and moisture across the global climates. The size of the continents is important in this situation. The larger the continent, the more area in which strongly season occur than with smaller continents (Haug, 2017).

### **Human causes of Climate Change**

According to IPCC (2014) the scientific consciousness on climate change is that human activities in our environment are the likely cause of the rapid increase in global average temperature in the past several decades. The most important among others are the effects from Green House Gases (GHGs).

**Greenhouse Effect:** It is a natural mechanism that retains the heat emitted from the earth surface. It is caused by a range of different gases in the earth atmosphere which causes climate change, an example is emissions from fossil fuel combustion.

**Deforestation:** It is the cutting down the rainforest faster than they can be replaced. It has a devastating effect on the carbon emission (Norgaard, 2010). This shows that rainforests every year absorb almost 30 percent of manmade Co<sub>2</sub> deposits in the atmosphere.

**Agriculture:** Agriculture has been observed as one of the reasons there is increase in GHGs noticed over past 250 years. It gives noticeable effects on climate change through the production of house gases (GHGs) i.e. carbon dioxide, methane and nitrous oxide (IPCC, 2014).

Agriculture causes climate change by altering earth's land cover which can change land's ability to absorb heat and light.

**Green Myths:** The habit of nursing mothers throwing away nappies(diapers) all over the environment causes climate change. They cause more global warming than plastics as they need much space to store (Norgaard, 2010).

### **Effects of Climate Change on the Environment**

The IPCC (2014) summarizes the major effects of climate change on the environment as follows:

- Rise in sea level, thereby threatening coastal communities.
- Sea-surface temperature is warming and contribute to the death of coral animals.
- Warmer temperature has led to heavier rainfall thus causing flooding in many Continents.
- Higher temperature causes a higher rate of evaporation and droughts in some areas of world.
- Warming has caused changes in timing of spring events and the length of the growing season.

### **Implication of the effects of climate change in human health**

In the words of IPCC (2014) that warm temperature affects human health in the following ways: Those with heart problems such as asthma, the elderly and the young can be vulnerable to extreme heat; extreme temperature can lead to loss of life.

There can also be changes in the range of parasites that can cause deadly disease e.g. spinal meningitis. Warm temperature can pollute air and water which harms human health, for instance, outbreak of cholera may become more frequent.

Hurricane and extreme heat may occur which may result to more event related deaths, injuries, malaria and yellow fever spread by mosquitos and other insects.

High temperature with favorable rainfall patterns may prolong disease transmission in some regions where certain diseases already exist. All these climatic change effects on the

Environment and health of the individuals by implication affect the classroom organization.

The classroom room does not exist in a vacuum neither does it exist without people. The classroom is a micro-environment in a macro-environment. Also the effects climate change has on an individual in the environment could also be applicable to children in the classroom.

Therefore, the classroom should be properly managed by the women scientist as the teacher in the face of climate change.

### **Classroom management by the teachers of women scientists in the climate Change**

The classroom in the conceptual view of Atanda (2013) is a room where a class of Pupils/students having similar characteristics is taught. It can also be defined as a room designed and furnished for the purpose of teaching and learning. Classroom management on the other hand according to Argundade (2015) refers to it as some forms of arrangement and Co-ordination that go on in the classroom.

From the above definitions, it is established that the creator and motivator in Classroom management is the teacher. The teachers which may be women scientists have to be aware of these climate change affecting classroom management: excessive cold, excessive heat, heavy wind, storm and flooding; others are heavy rainfall and erosion.

Classroom management in climate change refers to the process of getting teaching and learning activities accomplished while facing the above mentioned climate change in our environment.

### **The roles of women scientists as teachers in the management of climate change**

In a period when changes in the climate has been observed to occur and its subsequent effects, the environment and health, the teachers should be aware of the fact and endeavor to play some roles that would enable them achieve the goals of education irrespective of the environment and climate change. The following are some of them:

#### **Appreciation of Individual Differences of the child**

The teacher should understand that there are individual differences of the students, with difference in interest, abilities and weakness in the classroom. Some children could be infected with disease as a result of climate change. Such students may not be able to respond to learning effectively. The role of the teacher is not to scold learner but be humane while teaching them; rather than discriminating against such infected children who might be slow in learning ability. The teacher should appreciate their conditions, treat them with care, guide, monitor and motivate them during teaching learning process to obtain maximum desire.

#### **Appropriate Method of Teaching**

One way of managing classroom in a period of hot weather is to consider appropriate method which is the environment where teaching is taking place. The teacher would be able to know the method to apply during hot, heavy rain and cool days so that the learners can benefit from such teaching (Atanda, 2008).

#### **Good Classroom Arrangement**

Classroom arrangement is described as the orderliness in the way and manner the items found in the classroom and the students are arranged. The teacher should be able to arrange the desks, chairs, chalkboard, instructional materials and learners in a way that there will be free movement of air in and out of the

classroom. This will help to reduce the effect of high temperature of the day and learners will become cool and calm and be able to concentrate on the lesson.

### **Managing Students Behavior**

In the views of Argundade (2015) behavioral problems present the greatest challenges to school teachers. Some learners may not be responsive to conditions of extreme heat during learning period. Some students may feel tired, some are ready to play and some sleepy due to high temperature in the environment. The teacher should be able to manage such students to avoid being nuisance to himself and to other students.

### **Locomotion of the classroom**

This implies that the teacher can move the class when there is need for such situation. The teacher as a woman scientist should establish an environment that is conducive for learning. In a situation that the environment is very hot, the class may not be suitable for afternoon lessons as learners may not concentrate. The teacher can make the class move outside to a shady tree to have cool environment conducive for teaching and learning to take place.

### **Teachers presence in the classroom**

Some of the effects of climate change as earlier discussed is frequent heavy down pour and thunder storm. In managing the classroom in this situation, the teachers' presence in the classroom is needed. Ethically, Maduagwu (2016) sees teachers' presence in the classroom as important because it serves as a protector to the children when there is thunderstorm or heavy rainfall that may disturb the classroom.

### **The teacher should have knowledge of the happenings**

If the teacher is aware of the events of climate change, she would be able to educate the leaners and that would solve climate related problems in the classroom.

### **Implications of climate change to classroom management**

- Improper building of classrooms
- Students and the teachers are absent from school
- Students do not pay attention during lessons.
- Disorderliness in the classroom
- A child who is healthy at home may fall sick in the class
- Students may be late to school
- Hot weather chases the students out to learn under shady trees.

### **Conclusion**

It is observed that climate change poses serious problems to both human and material resources. For educational goals to be achieved especially in the climate change and its environmental attendant problems there is need for proper management of classroom by the Teachers. However, it is better sympathetic to notice that Nigeria is among the countries that contribute least of all climate changes, but may perhaps suffer most of the results of climate change in our environment.

### **Recommendation**

The women scientists in ministry of environment in Nigeria should concentrate more on tackling those environmental problems that impact more on the lives of the citizens. People should be well informed on the danger associated to building schools in coastal Lines.

Nigeria being vulnerable to climate change and her inability to adapt to these changes may be threat to education, classrooms and people. It is advices therefore, that climate change management should be everybody's concern.

Children should be given health care in area of immunization against deadly diseases that emanate from climate change.

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