

# **Basic Education Science Curriculum In Ghana: A Proposal On Enhancing Its Earth Science Content Level.**

## **Education for Specialized Subject Matter and Field.**

### **Natural Science Course**

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#### **1. General Introduction**

Earth Science plays a unique and essential role in today's rapidly changing world. It is an integrated study of the Earth's history, composition, structure, and its environment in space. It is therefore necessary for children to have some basic knowledge in this subject to enable them have a fair idea about the earth and how human activities are interrelated with it. However, in Ghana, the main science subjects taught at the basic level of education includes Physics, Chemistry, and Biology and some content in Earth science, but this contents are often integrated with the other sciences and not taught into details as expected. This motivated the researcher to find out the content of Earth science in the science curriculum at the basic level of education in Ghana and students' as well as student teachers knowledge about it.

#### **2. Ghana's Education System**

The system of education in Ghana has under gone several changes to ensure that it meets the present needs of the nation. Currently, the 6 year primary, 3-year junior secondary, 3 year senior secondary and 4 year university (6-3-3-4) system is what is being practiced. The first 9 years is termed basic education and is compulsory for every school going child. English is the medium of instruction.

In Ghana today, much emphasis is placed on science subjects because science and technology education has

been accepted as the engine that could move a nation towards development. A credit in science is a must in order for one to qualify to enter secondary school and tertiary institutions.

#### **3. Earth science content in science curriculum-Ghana.**

Earth science concepts found in the basic level science curriculum are: water, soil, sky and heavenly bodies, natural disasters, rocks and the universe.

#### **4. Background of student teachers.**

It is impossible for any nation to achieve the numerous gains of education if there are no good teachers who are willing to carry it out. It has been observed however that even though education is valued only a few really want to become teachers. A survey is thus conducted to find the background of student teachers of Presbyterian Training College (PTC) and Naruto University of Education (NUE). The survey revealed some differences and similarities in responses given by these two groups of students. Most student teachers of NUE had teaching as their dream career while the reverse is the case for PTC student teachers. It also came to light that the greatest problems of basic education in Japan are of social nature, like poor teacher student relation. On the other hand the greatest problem of basic education in Ghana is of economic nature, like low salary of teachers. Most student teachers of both schools however think teaching is a good career and it is

important to understand children in order to become a good teacher

### 5. Knowledge student have about Earth science.

Earth science is integrated with other science aspects and this makes teachers focus more on these sciences rather than Earth science in Ghana.

To determine the knowledge level of these students, a survey was conducted in Ghana and Japan and the data was compared. The data revealed a better performance of the Japanese students compared with their Ghanaian counterparts. Figures 1 and 2 throws some light on this.

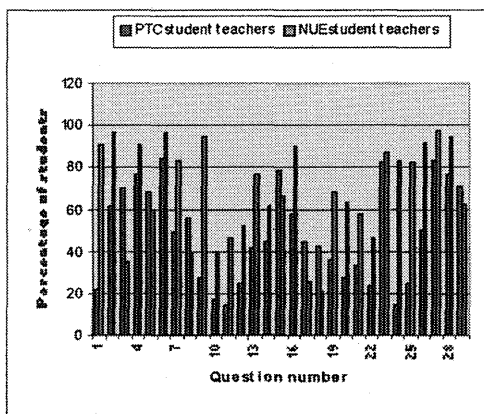


Fig.1: PTC student teachers vs. NUE student teachers.

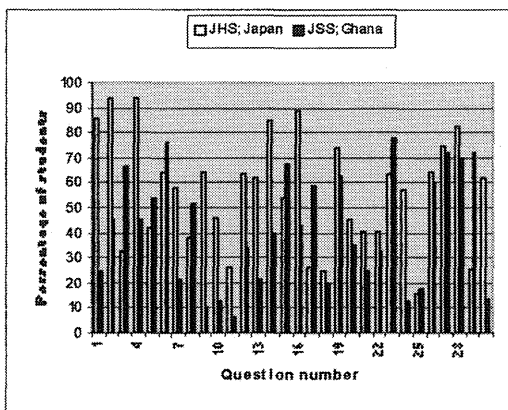


Fig. 2: Junior High School (JHS)-Japan vs. Junior Secondary School (JSS)-Ghana

### 6. Proposed Earth science concepts and contents.

Considering the importance of Earth science education in comparison with Ghanaian students' knowledge about this subject, some concepts and contents have been proposed. The contents being proposed is presented with activities, illustrations and pictures to help teachers teach the subject well and for students to better understand what they are being taught. Most of the activities are easy and safe to be carried out even by students on their own.

### 7. General discussion and summary

Earth science is not stated as an aspect of science and as such concepts found in the curriculum are not given the needed attention as is required of the subject by teachers. Due to this, students sampled in Ghana did not perform well in the subject as compared to their Japanese counterparts.

Majority of student teachers sampled did not have teaching as their dream career but are pursuing teaching due mainly to financial and qualification reasons. Most of these student teachers have plans of leaving teaching if given the opportunity to pursue their dream career. About 11% of student teachers however plan to remain teachers despite all the problems that beset the education system in Ghana.

### 8. Recommendations

The Ministry of Education in Ghana should acknowledge the importance of Earth science and bring it at par with the other science subjects. Teachers should also be educated about Earth science so that they can teach it well. The proposed Earth science concepts and contents should be incorporated into the Ghana's basic school science curriculum.