

Review of the Physics Education System in Africa

Introduction

The education system of a country is defined by the teaching methods, learning environment, government policies, assessment technique adopted in the country. It is of great importance to know how the education system differ from country to country in Africa. If the mode of teaching physics in Togo is different from Nigeria even though they are both West African countries, then we should be curious to know the possible factors responsible for this and how does this difference affect the quality of the result achieved. A perfect understanding of the education system of a university will affect our expectations from students from the university.

A short survey was conducted and here are our deductions:

- Every field in physics is significantly represented in Africa universities.
- Official languages in Africa are English, Swahili, French, Portuguese, Spanish and Arabic
- Grading scale ranges from a scale of 4.0 to 20.0

We will be comparing Nigeria and Mozambique as our case study

- **Question - What is the name of your department?**

Nigeria – Department of Physics, University of Ibadan, Nigeria

Mozambique – Department of Physics, Eduardo Mondane University, Mozambique

- **Question – What is the official language?**

Nigeria – English

Mozambique - Portuguese

- **Question - What is your grading system?**

Nigeria – 4.0

A=70-100

B=60-69

C=50-59

D= 45-49

F=0-44

Mozambique – 20.0

A = 15-20

B = 12-14.99

C = 10-11.99

F = 0-9.99

- **Question - Do you have to write exams every semester?**

Nigeria – Yes. It is compulsory for every student to write exams every semester on the theory courses. Practical courses are graded using the report submitted for each lab session. The exam duration is between 2-3 hours.

Mozambique – Students have to write exams every semester and the exams are theoretical and practical depending on the subject. Duration for written exams is 90 min.

Also,

- i. Students with cumulative point of 0-9 are excluded from the exams and have failed automatically.
- ii. Students with 10-13 points before exam are allowed to write the exam and the final point is the average between the point before and the grade in the exam
- iii. **Students with an average of 14-20 are excused from the exam and pass to the next level**

• **Question - Tell us about the undergraduate research program?**

Nigeria – After completion of coursework, students are assigned supervisors by the department. The supervisor guides the student either in his research interest or a suggestion from the student. The result of the research is defended to the academic committee. Duration is 2-3 months.

Mozambique – After completion of course work, students must choose one of the forms of assessment:

- 1) State exam
- 2) Degree thesis

In the state exam, Students are divided into groups and each student is to present a literature review of a particular topic assigned by the group. The student is graded by his ability to understand the concepts and answer questions. Duration is 1 month

In the degree thesis, A student is assigned a supervisor and a complete research work is defended to the committee. Duration is 6 months.

Recommendations

1. A Book/Database that contains information about the education system of each university in Africa.

We propose a collection of the information of all the departments of physics in all the universities in Africa. This collection can be in a book form or online database or both. The information includes the following:

- Syllabus
- Areas of Specialization
- Experimental and Computational Resources
- List of Lecturers and their research interests
- Grading system
- Contact information – Email, website link, etc.

A one stop information of all the universities in Africa will strengthen collaboration among African scientists as well as exchange programs within African universities. The awareness of the location of the certain experimental and computational resources will be achieved without the informal networking we are used to. Also, universities outside Africa will build more trust in African student's foundation since they can easily access information about the background.

2. Certified Africa Uniform Evaluation System

Due to the diversity in the grading system across universities in Africa, we propose we have a certified evaluation system designed by Africans for Africans. Any transcript regardless of the grading scale can be converted to a standard scale that is accepted worldwide. There are a lot of commercial websites that African students are subjected to use by American and Canadian universities to convert their grading scale to their standard. It is unfortunate that these website creators have no detailed information about our education system and there is high possibility of bias in their computation.