

**CONTINUOUS CURRICULUM
DEVELOPMENT FOR GEOMATICS
EDUCATION IN AFRICAN UNIVERSITIES:
THE NIGERIAN EXPERIENCE**

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INTRODUCTION

- ✚ Surveying in most of the developing countries in Africa and Asia, started with advent of Europeans in these countries.
- ✚ The practice of the profession simply followed what obtained in those countries of Europe.
- ✚ The survey practices were geared towards economic exploration and exploitations.
- ✚ In Nigeria, survey practices were in the areas of cadastral surveys essentially for the acquisition of land for the Crown and for developments of estates, mineral resources, road and rail designs, and survey control establishments

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- ✚ The discovery of Coal in Enugu and columbite in Jos in the early part of the 20th century and the movement of agricultural goods by rail brought surveying to prominence.
- ✚ These essentially created the need for the establishment of survey controls along the rail lines. This was later followed by the establishment of framework controls using triangulation, traversing, trilateration, and geodetic levelling and trigonometric levelling methods.
- ✚ The role that surveying played in economic development Nigeria led to the establishment of school for the training of surveyors in Lagos in 1908 This school moved to its current location at Oyo in 1935.
- ✚ Today Surveying & Geoinformatics training in Nigeria is at three levels namely: university, technology and technical.

Training of Professional Surveyors

- ✚ The steps to become a qualified professional surveyor is either through:
 - (i) A first degree in Surveying & Geoinformatics
 - (ii) A Professional Diploma or
 - (iii) A National Diploma or Higher National Diploma
- ✚ With (i) and (ii) the candidate proceeds to do pupillage for 2 years and then the final examinations
- ✚ With (iii) the candidate needs to pass a technologist examinations to get to the level of (i) & (ii).

**GEOMATICS EDUCATION IN NIGERIAN
UNIVERSITIES**

- ✚ Training of Surveyors to degree level in Surveying locally started in 1962 at the University of Nigeria
- ✚ Today, 11 Universities in Nigeria offer Surveying & Geoinformatics programmes at degree levels
- ✚ There are plans to establish three new ones.
- ✚ This is not the case in other West and Central Africa countries
- ✚ Our records indicate that only the University of Kumasi offers Geomatics training to degree level in other West African Countries
- ✚ Similarly 16 polytechnics offer training in Surveying and Geoinformatics but most of them do not run programmes up to HND levels
- ✚ Other countries within the region offer programmes at the Polytechnic level but the details are scanty

**CURRICULUM DEVELOPMENT IN NIGERIAN
UNIVERSITIES**

- The curriculum in Nigerian has gone through three major stages namely:
- ✚ The 1962 – early 1970s, which was the era of measurement with theodolites, levels, tapes and other analogue equipments such as analogue eco-sounders, gravimeters and large size computers
 - ✚ The early 1970s – early 1990s, when electronic distance measuring instrument, Doppler instruments and GPS provided major changes in instrumentation and programmes
 - ✚ The early 1990 – to date, when GIS, total station, miniaturised GPS, Glonass, very fast computers were the driving forces in instrumentation and curriculum development
 - ✚ These changes in instrumentation and technology provided a need for curriculum changes and development in the universities

NATURE OF THE CURRICULA

- ✚ In the 1960s – early 1970s, the programme consisted of courses in land surveying, hydrography, photogrammetry, geodesy, cartography, mathematics, physics, lot of practical in land surveying and other general courses
- ✚ The mid 1970s to early 1990s saw the addition of courses in remote sensing, satellite geodesy, electronic surveying, computer science and management courses
- ✚ While the early 1990s to date witnessed the addition of course in GIS, environmental management, digital cartography, spatial database structure, spatial data infrastructure and information technology. This era also witnessed a period when students lost interest in field work and preferred office works
- ✚ Photogrammetry, remote sensing, GIS, SDI and digital cartography provided such opportunities

IMPLICATIONS FOR OLDER SURVEYORS

- The already qualified professionals could not cope with the changes in technology which also affected the way surveying was practised
- This is worsened by lack of jobs and general poverty in Africa
- Specifications for the few contracts that came up also made it impossible for the professional surveyors to cope since they were based on modern technology
- The poverty of the practising surveyors also affected interest into the profession
- The democratic types of governments of the 1960 – late 1990s also had its effect

RESPONSE BY THE NIS AND INSTITUTIONS

- ✚ The Nigerian Institution of Surveyors (NIS) responded by setting up a Mandatory Continuing Professional Development (MCPD) Programme, which compelled all members of the institution to obtain a certain minimum of credit hours on improving themselves yearly for future practice.
- ✚ The NIS mounted programmes in various parts of the country to reduce cost to members and to ensure full participation.
- ✚ Members can also gather credit hours by attending programmes mounted by training institutions such as universities and polytechnics.

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- Some of the training institutions such as the University of Lagos professional masters or diploma programmes in geoinformatics as a way of assisting the profession and other professional bodies interested in geoinformatics,
- The result is improved professionalism for both young and old.
- The new knowledge acquired offered more job opportunities to professionals.

FUTURE CHALLENGES

- ✚ Staff development is a major problem for Geomatics education in Nigeria.
- ✚ Most of the academic staff trained in Europe and America end up living there.
- ✚ Only the University of Lagos and the University of Nigeria offer postgraduate programmes in Surveying & Geoinformatics and all the training institutions draw their staff from these products.
- ✚ Three Professors are retiring this year alone from University of Lagos and this poses a serious challenge to Geomatics training in Nigeria.
- ✚ There is therefore a need to optimise the available human resources by institutions drawing from the available pool of academia in the country and in diaspora.
- ✚ FIG can assist by organising summer schools for regions of Africa.
- ✚ Countries can also seek support from the academia within the region.

Thank you!!!