EDUCATION STATISTICS

1.   Introduction

Education is one of the earliest social services to be introduced to Nigeria. Initially, the majority of primary and secondary educational institutions were established and run by missionaries. A relatively few were Government-owned.

In the post-Independence Nigerian Constitution, education was on the concurrent list and was virtually left to the then Regional Governments, with the Federal Government legislating on broad policy matters. Besides the University of Ibadan (which was established in 1948) and a few non-missionary colleges in Lagos, all other non-missionary educational institutions were inherited by their regions of location with the attainment of independence in October 1960.

During the first military administration, the Federal Government created more States and assumed responsibility for the three Universities established by the three erstwhile regions. Subsequently, the Federal and State Governments alike established more secondary and tertiary educational institutions, and to regulate their activities, the central Government established the National Universities Commission (NUC) and the National Board for Technical Education (NBTE). The National Teachers' Institute (NTI) was set up to handle primary school teachers' examinations, while admission to Universities, and more recently, Polytechnics and Colleges of Education are managed by the Joint Admissions and Matriculation Board (JAMB).

National youth service was introduced under the National Youth Service Corps (NYSC) scheme.

In addition to performing their statutory functions, these bodies have tremendously facilitated the compilation of education statistics in the country.

2. Coverage, Scope, Uses and Users of Education Data

Education is very important for sustaining and developing the people. With education, people are able to endure, mature. Acquire experience, wisdom and the capability to fend for themselves as well as serve their communities and nation.

Education is also both an instrument of stability and of change: stability in the sense that good traditions are documented, taught, imbibed and practised, and change because it equips people to meet new challenges.

In the same vein education is a tool for inculcating moral values in the citizen.

Education statistics, like other social data, facilitates planning. They constitute invaluable inputs for computing important social indicators which are used to monitor trends in the quality of life and in making regional and international comparisons.

3. Sources and Methods of Compiling Education Statistics

The following agencies are the sources of education statistics in Nigeria:

Federal Ministry of Education (FME), State Ministries of Education (SMEs), National Bureau of Statistics (NBS), Joint Admissions and Matriculation Board (JAMB), National Universities Commission (NUC), National Board for Technical Education (NBTE), National Commission on Colleges of Education (NCCE), National Teachers' Institute (NTI), National Youth Service Corps (NYSC), West African

Examinations Council (WAEC), National Examinations Council (NECO) and the United Nations Educational, Scientific and Cultural Organisation (UNESCO). The primary sources used by these agencies are educational institutions and State and Federal Ministries of Finance.

Before 1988, all statistics on education were products of the administrative system. They were records of regular educational activities, such as formal learning, teaching, provision and maintenance of facilities. In most cases, these statistics were published by the agencies listed above as annual abstracts or reports, while in a few instances, they were available in worksheets of the agencies.

Since education is on the concurrent list in the Nigerian Constitution, primary and most secondary educational institutions are managed by the States. Consequently, the returns referred to in the last paragraph are either not uniformly rendered or not rendered at all to the Federal Ministry of Education which has the responsibility to collate education statistics in the country. In effect, Nigeria's pre-tertiary education data matrix in national and international publications contained many empty cells.

In 1987, a UNESCO project on the computerisation of Nigeria's primary and secondary education statistics was launched. Details of its genesis and achievements are in Fagbulu (1991). In March 1988, the first national census to collect primary and secondary education statistics was conducted under the auspices of the UNESCO. Similar censuses have been the source of primary and secondary education statistics in subsequent years.

Following the conduct of these censuses, the Federal Ministry of Education now collects primary and secondary education statistics directly from all the primary and secondary schools in the country.

The National Universities Commission collects university education statistics directly from each of the universities through returns rendered on forms designed for this purpose.

Similarly, NBTE uses the polytechnics, monotechnics, vocational institutions and colleges of education as the primary sources of statistics on that sub-sector of education.

Statistical information on matriculation examinations and admissions to universities, polytechnics, monotechnics and colleges of education are available at JAMB, while WAEC and NECO are the sources of information on school certificate, general certificate of education and other examinations which are not conducted by tertiary institutions.

Statistical information on Nigerian graduates from Nigerian and foreign universities are available at the headquarters of the NYSC.

The National Teachers' Institute is responsible for collating information on Grade II teachers' examinations.

Finally, the FME, NBS and UNESCO are sources of published education statistics on Nigeria and other countries. The data are collected by FME and NBS from most of the other agencies listed above. The items of data are either based on census/survey or administrative statistics. The methods of collecting the data of each of these two types are discussed below.

In the early part of the 1975-1988 Period education statistics consisted of aggregates of data submitted to FME by SME's. At that time most data from the states were affected by the desire to attract Federal education grants allocated on school population and enrolment bases.

The Federal Ministry of Education conducts annual population census of primary and post-primary schools. The instruments for data collection are Primary Schools Data and Post-Primary Institution Data Forms which were returned directly to the Ministry.

The following are the three major items of data on which observations are recorded, along with some of the important details of each:

- general data: name/town/Local Government Area/State.
- enrolment: class/gender.
- number of teachers: qualification/ nationality/gender.

The preliminary processing of pre-1988 education statistics consisted of editing and scrutiny, second stage analysis consisted of computerized aggregation on Local Government Area and State bases at the Computer Branch of the Education Data Bank.

The data as collected at that time were characterised by non-response and non-uniformity of reference periods. Consequently, Nigeria was unable to produce reliable education statistics acceptable to planners, researchers and international organisations. These are the main reasons for Government's decision to collaborate with the UNDP and the UNESCO on the computerisation of education statistics.

After 1988, primary and secondary education statistics are collected through population surveys conducted nationwide on the last Wednesday of March each year. The items of data on these statistics are collected by teachers trained by consultants working under the auspices of the UNESCO Education project. This is funded by the UNDP, executed by the UNESCO and implemented by the FME.

The post-1988 exercise should strictly be described as a population survey because during that exercise a detailed or elaborate

questionnaire is administered to the entire population of schools. In the pre-1988 exercise discussed above, an inelaborate questionnaire i.e. containing very few less-probing questions was administered also to the entire population of schools, following Moser and Kalton it is a population census. A census is a less detailed or less rigorous inquiry than a survey. It is the coverage which is described as 'population' when it is total and 'sample' when it is partial.

The instrument for data collection is a pre-coded questionnaire containing 97 questions structured into four parts:

Part I : General and Summary Information.

Part II : Enrolment: Class/Age/ Gender.

Part III: Teacher: Qualification/ Nationality Specialisation /Gender.

Part IV : Physical Facilities.

The wording of the questionnaire is based on the terms and definitions of the Revised Recommendation concerning the International Standardization of Education Statistics adopted by the General Conferences at the twentieth session (1978) and the International Standard Classification of Education (ISCE)

The questionnaire is administered to every pre-primary, primary and secondary educational institution in Nigeria. The major items and details of data generated by the exercise on Local Government Area and State bases separately for primary and secondary institutions include:

- number of schools.
- enrolment: class/gender.
- number of teachers: qualification/ nationality/major area of specialisation/gender.
- information on selected physical facilities: boarding/utilities (water, electricity)/sports and recreation/ conveniences/libraries.

From available records of all pre-primary, primary and secondary educational institutions in Nigeria the details of the information grouped into the four parts listed above (as at the last Wednesday of March) are extracted by teachers who have been trained for this purpose. The questionnaires are retrieved and their contents captured directly into computers.

The bulk of post-secondary education statistics is collected administratively through reports and returns. Although most of such statistics are supplied by individual institutions on forms designed and issued by the FME, the forms are not as detailed as those used for collecting pre-tertiary education statistics.

Following are the statistics of colleges of education, technical and university education. Statistics of JAMB, NYSC scheme, WAEC and

NECO also belong to this category. Statistics of Colleges Education are collected by the FME directly from each of the Federal and State Colleges of Education. Three forms are used for this exercise:

- Enrolment in Colleges of Education by Subject Combination, Year of Study and Gender (COE 1).
- Graduate Output by Subject Combination and Gender (COE 2).
- Academic Staff by Qualification and Gender (COE 3).

Processing and analysis consist of simple aggregation of enrolment by State, year and subject combination, year of graduation and subject combination and teachers by degrees obtained.

The following statistics cover polytechnics, monotechnics, technical colleges and vocational schools. Information collected on polytechnic and monotechnics are more detailed. These are through returns on prescribed forms designed by the NBTE. The major items of data and details that can be extracted from the completed forms include:

- Enrolment, Graduation, Year of Establishment: Institution/Type of Diploma.
- Teaching Staff: Department/Nationality/Gender.

For the Technical Colleges and Vocational Schools information are collected on:

- Enrolment, Number of Teachers, Year of Establishment: Institution/Gender.

Statistics of university education are collated by the NUC through reports and returns submitted to it by the Universities and JAMB. Data are collected on the following major items and details (The reporting units and reference period are stated in parentheses):

- Student Record: Universities/State/Faculties/Gender (Annual, All Universities).
- Staff Strength: Universities/State/Faculties/Gender (Annual, All Universities).
- Budgetary Estimate: Federal Universities/Faculties/(Ad-Hoc).
- Project Completion Level: Universities/Faculties (Bi-Annual, NUC).
- Academic Programmes Inventory: Universities (Ad-hoc, All Universities).
- Detailed Academic Staff Register: Federal/StateUniversities/Gender/Faculties (Annual).
- Staff/Student Accommodation Record: Gender/State/Federal Universities/Faculties/Number Graduating (Annual).
- Research Resource Record: (All Universities, Annual).
- Student Distribution Record, New Entrants: Universities/ State/Gender (JAMB, Annual).

Following are the statistics of education as compiled by NYSC, WAEC, JAMB and NTI. The NYSC scheme was inaugurated in 1976. It compels fresh Nigerian graduates who are below 30 years of age to undertake service for a year before proceeding to work or registering for post-graduate studies. The NYSC is the sole source of information on fresh graduates of Nigerian origin who study at home or abroad. Items and details of data available at the NYSC include:

-      Number of participants in NYSC: State/Gender.
-      Distribution of Corpers by Course of Study.

Other statistics such as those on distribution of corpers by university and any other variable of interest are available on request at the NYSC.

Statistics of public and matriculation examinations are available at WAEC/NECO and JAMB respectively.

WAEC and NECO conduct the General Certificate of Education, School Certificate Examinations, and a number of other public examinations. Also JAMB handles entries to all tertiary institutions either by examinations or by direct entry.

The activities of WAEC, NECO and JAMB are automated, including correspondence with candidates, grading of candidates' scripts in some cases, and results of the examinations. The items and details of data produced include: candidate's names, number, State, gender and examination results.

4. Current Methods of Data Storage and Dissemination

Since the two main categories of education statistics are those collected through census surveys, and as by-products of administration, no rigorous statistical techniques are adopted in data processing and analysis by most of the relevant agencies.

The first major post-enumeration tasks after the census survey forms, returns and reports are received are editing and validation. Since every institution is expected to report on its activities at least once a year, out-lying information in any one year can be detected by reference to the earlier year's report.

As already indicated by the items and details of data generated by census surveys returns and reports on education statistics, most of the variables are categorised. As a result, aggregation by

geographical (Local Government Area, State), class, faculty, gender, qualification, etc., into frequency tables is the most commonly-used statistical procedure. This also explains why non-parametric and other categorical methods are most frequently used in analysing education statistics.

Some of the variables generated by the census surveys and routine statistics are about the finances of educational institutions and physical facilities which are measurable on the ratio scale. These variables can be analysed using the various statistical methods applicable to sample survey data.

In respect of examination statistics, fairly rigorous statistical techniques are required for data capture, processing and analysis since the most important variables are candidates' scores.

However, once the scores are determined and coded as A,B,C,D,E, or F as is the case for School Certificate Examination, the variables become categorical and fall into the same class of most education statistics discussed above.

As a result of the large number of questionnaires to be processed, and the fairly large number of questions in each questionnaire, the compilation of education statistics is highly computerised. Consequently, most of the agencies involved in the production of education statistics have powerful computer configurations capable of performing a wide range of electronic data processing activities. Such agencies include NUC, NCCE, NBTE, FME, WAEC, NECO, JAMB, NTI and some tertiary institutions.

Some of the agencies whose data collection activities were discussed earlier also publish education statistics. The most informative publication on Education statistics in Nigeria is **Statistics of Education in Nigeria 1980-84 and Statistics of Education in**

Nigeria 1985-1989 published in 1985 and 1990 respectively by the FME. In addition to statistical information on education at all levels, it also contains information on results of School Certificate, G.C.E.'O' and 'A' levels, H.S.C. and Teachers' Grade II Examinations. The sources of data published in the FME's Statistics of Education in Nigeria are NUC, NCCE, NBTE, JAMB and WAEC.

The National Bureau of Statistics publishes education statistics received from most of the agencies mentioned above in the **Annual Abstract of Statistics**. These agencies are the FME for Primary and Secondary Education, NUC for University Education, NBTE for Technical and Vocational Education, NYSC for first degree graduates and youth service, and JAMB for admissions to tertiary institutions.

Technical and vocational education statistics are published by NBTE in **Digest of Statistics on Technical Education in Nigeria**. The digest contains detailed information on individual institutions on enrolment, staff and student turn-out (graduates).

National Commission for Colleges of Education publishes statistics on that level in **Statistical Digest on Colleges of Education in Nigeria**.

Other published sources of education statistics are: NUC's **Annual Report, Quarterly Review, and Annual Dairy** all of which contain statistics of education in Nigeria, and FME's **Directory of Post Primary Education Institutions in Nigeria** which contains information on the location, year of establishment, status and enrolment figure of each post primary educational institution in Nigeria.

In addition to these national agencies, most State ministries of education publish the relevant data in **Digest of Statistics**.

Finally, unpublished education statistics can be obtained from NYSC, NTI, JAMB, WAEC and NECO.

The National Bureau of Statistics has so far collected education statistics directly from the producers. Primary and secondary education statistics for the period 1989-1993 were collected in hard copies of computer print-outs from the Education Data Bank. Also, the Federal Ministry of Education released, in the same data on primary education, statistics and historical time-series on primary, secondary and tertiary education statistics in hard copies to the NBS.

Statistics of university education are obtained from the Statistics Unit of the NUC. **The Annual Abstract of Statistics** and JAMB are the sources of NBS's data on entry into Nigerian Universities.

Statistics on youth service by Nigerian graduates are available at the headquarters of the NYSC.

Statistics of technical and vocational education were obtained from NBTE's **Digest of Statistics**.

Statistics on College of Education were obtained from **Statistical Digest on Colleges of Education in Nigeria** from National Commission for Colleges of Education.

All the numerical information on education statistics are obtained in hard copies. The most important single source is the Statistics Division of the FME's Planning, Research and Statistics Department. The contact person is the Assistant Director of Education Statistics in FME, Victoria Island, Lagos. Although Education Data Bank, JAMB and NUC should be able to transfer

data to NBS in machine readable form, hardware and software incompatibilities heve not facilitated this mode of data transfer.

5.   NBS Data Base Coding System for Education Statistics

The coding of this sector follows the International Standard Industrial Classification [ISIC], revision 3 issued on 4th August, 1988. Thus, the division code, or the first two digits of the code assigned a six-code variable (which identifies the division to which the dataset belongs) is wherever feasible taken from the ISIC. The ISIC division codes have been allocated on the basis of exact correspondence in respect of most sectors except in respect of most sectors except in those where proximity to the nearest closely-related ISIC code and existence of un-used codes were the basis for the allocation of codes. Going by this system, 'Education' is given the ISIC Code '80'.

The Items and Detail Codes

The details are almost completely gender -specific in respect of observations on human beings. Even where numerical data are not available separately for males and females, the codes are created for each gender and the total for both.

While efforts have been made to ensure that the Division Code or the first two digits of the code assigned to each variable conforms as much as possible with the ISIC, the Items and Details Codes which form the last four digits of the code assigned for each variable are arbitrarily determined. The Division-Item-Details [DID] coding system is the basis for coding NBS's datasets. The item under each dataset is the elementary entity or group of elementary entities (multiple-item cases), about which statistical data are gathered. For

instance, "Primary Education Statistics in Nigeria", coded 8001 is an item with 53 details.

Generally, the National Bureau of Statistics (NBS) is using six-digit-code for attributes (variables). The first two digits are used to identify a particular division, the first four digits are used for a particular item under the division, while the first two is to identify the Divisions and the next two to identify the item under that division. Where an item is repeated in two or more division, that item is assigned the same 3rd and 4th digit code. The single-item cases have details peculiar to them such as item 0102 titled "Total number of male pupils in primary 1".

In coding the details, six digits are used to identify a particular attribute (variable) as follows: The first two are the division code, the next two for the item and the last two as the detail (variable) under the division and the item code. Based on this coding system, the NBS data structure (Statement of Requirements) for Education Statistics in Nigeria is as shown below:

1.   Primary Education Statistics: Number of Schools; Number of Pupils (Class, Gender), Number of Teachers (Qualification, Gender).

2.   Secondary Education Statistics: As for Primary Education Statistics.

3.   Statistics of Teacher Training, Technical and Vocational Education: Number of Institutions; Enrolment and Teacher by Gender.

4.   Application to JAMB for First Degree Courses by University of First Choice: Major Disciplines and Gender.

5.   Placement by JAMB to Universities for First Degree Courses by University, Major Disciplines and Gender.

6. Total Student Enrolment by Major Disciplines in Nigerian Universities.

7. Postgraduate, First Degree, Diploma and Certificate Awards by Nigerian Universities by Major Disciplines.

8. Number of University Teachers by Major Disciplines.

9. Deployment of National Youth Corpers by Gender and Course of study.

10. Statistics of Colleges of Education by Institution, Gender,State of Origin Qualification, Graduate Output, and Staff, etc.

11. Statistics of Polytechnics by Programme/Level, Gender, and Accademic Staff.

12. Adult Literacy Rate Statistics

Some Education Indicators

Most of the items of data on education are gender- and State-specific. Although primary and secondary education statistics are available on Local Government basis, the NBS as at now holds all items of data on State basis. As stated before some items of data will be held for selected Local Government Areas in each State when the NBS's output processing routines are operational. The data item coded in the SOR fall into the following 12 categories:

6. CONCLUDING REMARKS

Currently, with the establishment of Education Data Bank in the Federal Ministry of Education, the quality of data collected and analysed on Nigeria's Education statistics has become considerably high. As a matter of fact, primary and secondary education statistics are now reliable and timely. The Federal Ministry of

Education should continue with the current practice of declaring the last Wednesday of March of every year or any other convenient dates annually as Education Statistics Day on which questionnaires for collecting primary and secondary education statistics are completed by teachers.

Technical education statistics as currently published by the NBTE are quite comprehensive and detailed. However, the presentation is somewhat cumbersome and does not facilitate usage since the data of each institution are published separately. This makes the document very voluminous, and further aggregation of attributes across institutions will be necessary to enhance the quality of the data in the publication.

Similarly, the National Commission for Colleges of Education publishes Statistical Digest on Colleges of Education in Nigeria. These statistics are exhaustive and detailed on an institutional basis, although further aggregation of attributes will be needed.