

INFORMATION COMMUNICATION TECHNOLOGY: THE CATALYST FOR ADEQUATE DATA MANAGEMENT IN ANAMBRA STATE SECONDARY EDUCATION BOARD

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Abstract

This paper investigated Information Communication Technology as the catalyst for adequate data management in Anambra State Secondary Education Board. The purpose was to identify the practices of the Board in managing staff and students' records, and the competence of the staff in ICT. Two research questions guided the study. The study adopted descriptive survey research design. The population of both the senior staff and the principals stood at 525. 362 respondents from four education zones were sampled through balloting. A 20-item questionnaire was used for data collection. Mean statistics was used for analysis. The findings were that: Data on staff and students are stored using the old method and not the new safer method; Data managers do not go round to collect data but rely on data supplied by schools; Data management units are not adequately funded; Data managers lack the ICT skills to generate, process, store, or retrieve data; they lack the skills to create folders, design concepts or develop project-specific data management plans. A number of recommendations were made.

The success of any organization be it a school or otherwise, largely depends on its ability to acquire accurate data at the right time, from the right source; process them, store and retrieve the resultant information for decision-making. The school administrator needs data about the internal and external environment of the school, the objectives of the school, the policy guidelines and the resources availability,

in order to achieve the stated purpose of the enterprise (Adeboyeje, 1992). Osuala and Okeke (2006) articulated that in 1960's many managers found decision-making difficult because of inability to obtain desired information in the desired format at the desired time. With the availability of the required data in the desired format from the right source and at the right time, the goals and objectives of educational programmes, especially Universal Basic Education (UBE) may be realized.

Data, according to Sinclair (2004) means information, usually in the form of facts or statistics that one can analyze while Okeke (2011) articulated that data are the raw facts which when manipulated, yield useful information for decision making. Tilton, Jackson and Poharm (1987) stated that the terms 'data' and 'information' are frequently used interchangeably. However, according to the scholars, data often refers to unorganized or raw facts while information is the knowledge that results from the manipulation of data.

Data management, according to Nwanyanwu (2003) is an organized mechanism consisting of physical components, such as computers that work together to acquire data, process them, store and retrieve the resultant information to administrators who use them for decision-making. Also, Okeke (2011) opined that data management is the effective co-ordination of people, equipment and procedures to gather, sort, analyze, store and retrieve accurate information for decision-making.

It is of the researchers' opinion that for proper decision-making in educational planning to emerge, it is necessary to have proper data management. This is because data provide the bases for the planning of educational programmes. Hence, Mgbodile (2007) stated that data supplied for educational planning determine to a large extent the success of educational goals. The scholar also opined that poor management of data largely affects effective planning of education. As a matter of fact, practices of the Secondary Education Board in Anambra State pose problems for effective decision-making in the planning of education in the state. However, the availability of accurate information makes a world of difference between success and failure; profits and losses; victory and defeat in any forward-looking enterprise.

The Secondary Education Board and the State Ministry of Education are expected to be responsible for the acquisition, storage and dissemination of the state education data. This stipulation as enshrined in the National Policy on Education (2004) under the secondary education suggests that the Federal Government is obviously aware of the great importance of education data as containing important information for effective planning of education. Considering this provision, the researchers were worried that accurate information on staff and students records is not really made available for the planning of education. No wonder Okeke (2011) and Nwanyanwu (2003) articulated that reliable information on both staff and students records are not made available in the School Board for effective planning of education.

It is worthy of note that Universal Primary Education (UPE) failed largely because there was absence of reliable statistics throughout the country. Hence, Ukeje,

Akabogu and Ndu (1992) articulated that there were in-accurate data and absence of reliable statistics in the country during the implementation of Universal Primary Education (UPE), so it failed. It seemed that all over the country, people take for granted the provision of reliable statistics probably because they are unaware of the impending doom or because of their selfish interest. No wonder Mgbodile (2007:129) pointed out that "our social dishonesty denies us of reliable statistical data at any point in time".

Consequently, it is also important to note that the absence of reliable statistics may be as a result of poor management of data throughout the country. The data management practices of the Board, according to the researchers' observation are poor to produce accurate information on staff and students records. It seemed that educational planners sometimes base their projections on just any available statistical data whether accurate or inaccurate. It is observed that in the statistical unit of the School Board, data are generated through the school principals who prepare the information and send to the Board. It is also important to note that these data are stored in files kept on shelves, drawers, tables or even on bare floor. This method of collecting and storing data enables easy manipulation of such data by any malicious persons (Okeke, 2011). Uwazurike (1991) noted that the stock and flow of teachers, students and educational facilities appear to be poorly kept probably because this area of educational management is largely neglected and overlooked. There are certain data required to be kept in relation to staff and students records. These data according to Mgbodile (2007), Igwe (2006) and Okeke (2011) are: staff data on age; sex and educational qualifications; number entering teaching, date of entries and date of birth, date of first appointments, promotions, transfers, retirement age, among others. Data on students should be on; population by each year

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of age and sex; enrolments in primary or secondary; number of pupils and their movement into, within and out of primary and secondary schools by class and sex; enrolment by age, class and sex, among others.

The above data on staff and students are important for the purpose of drawing up policies to ensure adequate supply of teachers, educational facilities, adequate funding; provision of skill requirements of employees; determination of recruitment levels; directing the flow of pupils in and out of the school system, among others, for all levels of education (Igwe, 2006, Mgbodile, 2007 and Okeke, 2011). Considering these purposes of data, there is the implication that inadequate data management could jeopardize effective projections or estimates for the achievement of these goals. There is the implication that students' enrolments in schools, provision of teachers, supply of educational facilities, among others, could be impeded. So, this suggests the need to improve on the data management by the School Board for better educational planning.

Invariably, the records of available staff and students in a given year in various disciplines are supposed to be adequately kept using the new electronic media such as the computers, CD-Rom, among others, so that information on them could be dully kept, jealously guarded and free from being manipulated. This method of data storage on shelves, files or drawers are outdated and therefore may be threatened by rodents and ants. It is also worthy of note the views of Bosah (1997) that one of the most serious setbacks to educational development in Nigeria is non-availability of data or lack of authenticity where available. The scholar also confirmed the evidence of poor data management in Nigeria, and its prevailing problems and the necessity of handling data in

a more civilized manner, which ensures its full authenticity. The scholar stated that computer and film services are modern facilities to facilitate reduction of record volumes and easy retrieval of records.

Today, Information and Communication Technology has been a necessary tool viewed worldwide as being adequate for management of data (Okeke, 2011). ICT according to Anaekwe (2002) is an important tool in all-human enterprise requiring decision-making in generating, storing and retrieving of information. According to Oketunji (2002), it is the application of computers and other technology in acquisition, organization, storage, retrieval and dissemination of information. ICT has actually come to stay because it remains a sine qua non in effective management of data today. Hence, Wikipedia (2012) stated that ICT covers any product that will store, retrieve, manipulate, transmits or receive information electronically in a digital form. .

Despite the importance of data and ICT, the researchers are worried because it is not certain whether staff of data management unit of the School Board, are competent in ICT which will enable them to effectively handle the management of data. It is expected that anybody charged with the responsibility of data management should be experienced in ICT if the person actually wants to deliver his duties effectively. Unfortunately, it was observed that most data managers in the data unit of the Board were not experienced in ICT. They only acquire information from the principals, store and retrieve them manually, that is, by the use of their pens and papers. No wonder, some of the information needed to run the schools were usually circulated untimely and some of the data stand easily manipulated. Some staff claimed they had no need of training themselves on ICT since the products are not made available for use.

Statement of Problem

Adequate data management is viewed as a major resource for enhancing decision-making in offices. Achievement of adequate data management largely depends on the availability of Information Technology and the ability of the staff of data management unit to use the technology effectively for proper educational planning. Observations of happenings in the secondary schools, suggest that data management unit of the School Board is not efficient in the management of data.

The present practices of the Board in relation to staff and students records are inadequate for effective decisions in educational planning. The Board still uses the old method of storing information, which does not guarantee safety of information. The Board is yet to embrace ICT in data management and the inability to keep accurate data pose a lot of problems in decision-making. Such problems were fraud found in some education offices where ghost names appear in payment vouchers, ghost schools existing without official notice. It appears that students' enrolments in schools are politicized that in some schools, the teacher-student ratio is 1:80 as against the government policy of 1:40. Educational facilities seemed not evenly distributed and funding of schools seemed inadequate because there were no accurate data on which to base meaningful projections and estimates.

Research Questions

1. What are the data management practices of the Secondary Education Board in relation to staff and students records?
2. What is the competency of the staff of data management unit of the School Board in Information Communication Technology?

Methodology

The study adopted a descriptive survey research design. Descriptive survey research design, according to Nwankwo (2006:38) "concerns itself with ascertaining and establishing the status-quo, facts or pieces of information at the time of the research and presenting such facts as they are".

The population of the study comprised all the senior staff of the School Board in the state and all the principals of the public secondary schools. Based on the 2011/2012 academic year the population stood at 257 for the senior staff and 268 principals. Altogether the target population for the study was 525 respondents. The researcher randomly sampled and selected 362 respondents from four out of six education zones. This figure represents 68% of the target population and was considered adequate to represent the entire population.

The instrument used for the study for data collection was questionnaire titled: Information Communication Technology and Adequate Data Management Questionnaire (ICTADM). The instrument has two parts, A & B. The items were built in two clusters. Cluster one dealt with data management practices of the Board in relation to staff and students records. While cluster two dwelt on the competence of staff of data management unit on ICT. The items were based on the 4-point scale of Strongly Agree (4 points), Agree (3 points), Disagree (2 points) and Strongly Disagreed (1 point).

Two experts in educational management and one in measurement and evaluation in the University of Nigeria, Nsukka subjected the questionnaire to face and content validation in terms of clarity, relevance and structure. The experts' corrections and suggestions were incorporated into the relevant items, which gave the instruments their present structure and content.

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The instrument was trial tested on fifteen secondary school principals and five senior staff in Aguata and Otuocha zones of the state. Data collected from the pilot study was analyzed using Cronbach Alpha formula, a reliability co-efficient of 0.76 was realized and this was considered high enough to deem the instrument reliable for the study. Mean scores were used in answering the research questions. Since the 4-point rating scale was used for the instruments, the decision rule was based on the mid-point for the scale, which was 2.50. So, only mean scores of 2.50 and above were accepted as indications of Agree while mean scores below 2.50 were regarded as Disagree.

Research Question One: What are the data management practices of the Secondary Education Board in relation to staff and students records?

Table 1: Senior Staff and Principals Ratings on Data Management Practices of the Board in Relation to Staff and Students Records

S/N	Items	Principals	Senior Staff	Grand Means	Decision
1.	In my zone, records of staff on employment and students in enrolments are stored in files kept on shelves or drawers	3.41	3.65	3.53	AS
2.	Data on students' records are provided only by the school principals.	3.70	3.86	3.78	SA
3.	Data on staff and students are not stored using the new methods of better storage.	3.60	3.87	3.73	SA

4.	Data managers do not go round to collect data on staff and students records.	3.70	3.00	3.35	A
5.	Data managers rely mostly on data provided by the school principals.	3.50	3.52	3.51	SA
6.	Staff and students records are sometimes manipulated by some staff of data managements units.	3.62	2.91	3.26	SA
7.	Staff of data management units of the Board are not provided with traveling facilities for data collection.	3.53	3.84	3.68	A
8.	The file cabinets or shelves provided in my zone are not enough for the storage of data.	3.52	3.74	3.63	SA
9.	The data storage systems do not ensure safety of data.	3.43	3.70	3.56	SA
10.	Data on students are sometimes manipulated by the schools depending on the purpose for which the data is sought	3.51	3.32	2.91	A

Table 1 revealed that both respondents have very high opinion on data management practices in relation to staff and students records. Their opinions range from strongly agree to agree. This suggests that they agreed that: records on staff and students are stored only in files kept in drawers or shelves. The cabinets or shelves provided are not enough; some staff of data management and principals sometimes manipulate data on staff and students, among others.

Research Question Two: What is the competency of staff of the data management unit of the School Board in ICT?

Table 2: Senior Staff and Principals Ratings on the Competency of Data Management Staff of the Board in ICT.

S/N	Items	Principals	Senior Staff	Grand Mean	Decision
11.	Staff of data management unit of my zone are not competent in the use of data base soft ware to process data.	3.60	3.76	3.66	SA
12.	Staff of data management unit are not skilled in the use of computers to store information.	3.28	3.77	3.45	A
13.	Data managers are not competent on how to retrieve information through the internet.	3.17	3.58	3.31	A
14.	Staff of data management unit lack the skills in creating folders or information use in data management.	3.33	3.74	3.47	A

15.	Staff of my data management unit lack the skills in using database design concepts to efficiently store or analyze various types of data.	3.10	3.54	3.26	A
16.	Staff of data management unit in my zone lack the skill of generating data or making data entries.	3.21	3.76	3.40	A
17.	Staff of data management lack the skills in designing forms for receiving, processing or tracking data.	3.27	3.68	3.47	A
18.	Staff of data management lack the skills to develop project specific data management plans that address areas such as data coding, reporting or transfer.	3.27	3.64	3.40	A
19.	Data managers in my unit are not competent in the use of ICT for effective management of data.	3.23	3.60	3.35	A
20.	Data managers in my unit are not skilled in using ICT to install files.	3.43	3.63	3.50	SA

Table 2 revealed the grand means ranging from 3.26 to 3.66 showing that the respondents have very high opinion that staff of data management units are not competent in the use of ICT to generate, find, sort, process, print, design, and store or retrieve records. They lack the skills to effectively create folders as well as install files or download files from the computer. Staff of data management unit are not skilled in the use of ICT to effectively manage data to yield the best result for educational planning.

Discussion of Findings

The findings of the study showed that data management practices of the school Board in relation to staff and students' records are inadequate and so do not ensure adequate educational management. This finding was supported by Bosah(1997) and Okeke (2011) that there has been poor management of data in the Secondary Education Board in South-East zone of Nigeria. The scholar reiterated that the continuous poor practices in data management by the Boards do not ensure accurate statistics for effective educational planning. The scholars also opined that unreliable statistics cannot enhance any meaningful decision-making for effective educational management. Hence, Uwazulike (1991) pointed out that the stock and flow of teachers, students and educational facilities appear to be poorly kept probably because this area of educational management is largely neglected and overlooked by the government.

Table 2 also revealed that staff of data management unit are not competent ICT. Most of the staff lack the ability to use data effectively to improve their performance and to generally improve data management services in the Board. In the study carried out by Okeke (2011), the findings also revealed that staff of data management sections in South-east zone are not skilled in the use of ICT for effective data management. Ogbonnaya(2004) and Anaekwe(2002) in their separate findings found that there were inadequate personnel in the area of computer engineering operations, research and statistics for educational administration in Nigeria.

Conclusion

The findings of the study clearly suggest that there is poor management of data at the state School Board as well as its appendage offices. It is also obvious that staff

of data management units are not skilled in using ICT for effective data management considering the importance of staff and students records. As a matter of fact, the objectives of ICT is to make information available when needed, where needed and in the format needed. It is therefore imperative that the technologies be made available, staff of data management be trained as well as experts in ICT be employed for effective management of data.

Recommendations

Based on the findings of the study, the following recommendations are made:

- i. The State School Board should ensure that effective practices be retained in data management units of both zonal and the headquarters.
- ii. Governments should ensure that data management unit of the School Board is well funded.
- iii. Government should as a matter of urgency make available in the data management unit of the zones and headquarter the new electronic media for better processing and storage of data.
- iv. Government should as a matter of urgency organize training programmes on acquisition of skills in ICT for the data management staff of the statistical unit of the Board.
- v. Government should device the system of employing only skilled and qualified staff in data management unit of the Board.
- vi. Government and School Board should deem data management an important aspect of educational management by

- vii. employing serious measures for the maintenance of accurate data. It is important that Government initiates policies on data management and clearly stipulated so that operations in the data units should be properly followed.
- viii. It is also important that Government makes compulsory training on ICT for all staff of the School Board and its appendage offices.
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