

IMPORTANCE OF DATA COLLECTION, ANALYSIS AND STORAGE IN OUR EDUCATIONAL SYSTEM

BY
PROF. D.O. DUROSARO
DEPARTMENT OF EDUCATIONAL MANAGEMENT,
UNIVERSITY OF ILORIN, ILORIN.

Introduction

Every organisation is set up to achieve certain objectives. The founders of the organisation have gathered together both human and material resources as inputs to be processed in order to produce some outputs. Such outputs are usually subjected to some forms of evaluation to check if they meet expected standards. To enable an organisation to achieve the set goals maximally, there is a great need for the manager of the system to plan. Failure to plan is planning to fail. Planning is the process of identifying the organisation's goals, ascertaining resources available, prioritizing the goals, identifying alternative strategies for achieving the goals, choosing the best strategies and preparing programmes and activities that will lead to goal achievement.

It is therefore no exaggeration to say that records and record keeping are very vital tools for planning. Records are basically information. There are two categories of records that can be kept by any educational organisation. These are quantitative and qualitative information. While qualitative information are those information about the values of the system, objectives of the system and the curriculum of the system; the quantitative information relate to quantity, volumes and number. Quantitative information is often referred to as data or statistic. It will be an impossible task to plan and administer any organization in which records are not kept, or where records are carelessly and fraudulently kept. The education system is a sure system of production and we have numerous records or data we are expected to keep. Unfortunately, in Nigeria we need to improve our record-keeping culture. The poor nature of our record-keeping perhaps accounts to a great extent for our inability to plan and administer our education system without tears and serious embarrassment from time to time.

This paper therefore presents a humble attempt to examine the concept of data in educational management with a view to highlighting the importance of data collection, analysis and storage to our educational system.

The concept of data in our educational system

Data are simply referred to as statistics. Obviously, data are numerical measures of phenomena and they are used in the process of scientific decision making. Data are of common occurrence in all disciplines and fields of practice. The planning and management of any nations educational system depends greatly on the quality of data collection, analysis and storage. The educational

data can easily be classified into two. These are stock data and flow data. The stock data refer to the numerical data on educational resource items as they exist at any particular point in time. Examples of stock data include number of schools, number of classrooms, enrolment, number of teachers, number of classroom furniture, number of equipments, quantity of materials, and even fund available to the schools.

Flow data refer to the numerical value of the movement of human and material resources (teachers, pupils and other materials) as they flow into, flow through and flow out of the educational system. It is through flow data that we are able to generate information concerning new entrants, repeaters, drop outs, withdrawals and graduates of the educational system. These flow data are useful for thorough analysis of the educational system and for projection of enrolment, teachers, physical facilities and other resource needs. Usually, stock data are expressed in ratio while the flow data are expressed in rates.

Data collection is the process of gathering the various quantitative information about the educational system. This could be carried out in a variety of ways such as through observation, use of questionnaire or checklists, school census, situation and resource appraisal, as well as, by interviewing school personnel.

Data analysis is a process of collation, presentation and interpretation of the information contained in the data to aid decision making. There are mathematical techniques that are usually adopted in aiding data analysis. For example, we could use frequency counter, averages, mode, median, percentages, standard deviation, ratio and percentile ranks for descriptive analysis of educational data. Some of these analysis that are common in schools include teacher/pupil ratio, non schooling gap, enrolment ratio, promotion rate, repetition rate, drop out rate, transition rate, admission rate, retention rate, completion rate, graduation rate and wastage rate.

Data storage refers to the process of preservation of data collected in such a manner that will enable us retrieve such data when needed in future for use in decision making. Data storage can be done in a variety of ways. Data can be stored in files, on diskettes, on tapes, on films, on slides and pictures. These could in turn be stored in shelves, cabinets, cupboards or computerized.

The importance of data in the educational system

The collection, analysis and storage of data on the educational system becomes very important to the school manager for the following reasons.

The school managers have a responsibility to plan ahead for the system. Educational data are very vital tools for planning. For you to plan adequately for the future you need the data on what the past was and what the present is like.

Also, for the day to day decision making, the educational manager need data to guide their decisions. For instance, to do recruitment of teachers you need to have the data on number of teachers available by discipline, age and sex as well

as their work load. This will let you know your present stock, how well are they utilised and in which areas you have shortages.

Moreover, data collection, analysis and storage is very important to the school managers in the assessment of the growth and progress of the educational system. Data on enrolment, class size and number of teachers will show if the school is growing or reducing in size. The data on yearly performance of students in the terminal examinations such as Junior Secondary School Examination and Senior Secondary School Examinations will show if the school is progressing or not academically.

Further, data collection, analysis and storage enables the school manager identify areas of staff training and retraining needs. For example the data on students performance in Mathematics may point to a need to retrain the Mathematics teacher. If such teacher is an NCE holder it may be a pointer for a need to recommend him for in-service training for a degree in Mathematics.

The educational system needs to review the curricula in the various subjects and data collection, analysis and storage is very important in taking this vital decision on the evaluation and review of curriculum. Data on the trend the curriculum had taken in the past years vis-à-vis the social changes will guide the review of the curriculum.

In addition, data collection, analysis and storage is very important in the educational system because they aid accountability in the system. Periodically, inspectors from the Ministry of Education as well as auditors do visit the schools to monitor how the managers are utilizing the human and material resources. They call for data on these from the school head teacher. The head teacher may also be requested to give such account to Parents Teachers Association or Schools Board of Governors.

Another importance of data collection, analysis and storage in the educational system is that it aids projection of resource requirement. For the school manager to project the amount of fund that would be needed for the next session, there is a need to have data on number of teachers, teachers salaries and allowances and other running costs.

Conclusion and Recommendations

The education system is a production system that uses both human and material resources to achieve manpower production. To achieve the goal to the maximum, the manager must plan, implement such plans and evaluate success. These cannot be properly done without the use of data. The system also needs data to aid public accountability, curriculum review and staff recruitment and development. The success of any educational system depends mainly on accurate data collection, analysis and storage since poor data collection, analysis and storage could lead to recording of fiction instead of facts and this could distort sound decision- making.

To ensure good data collection, analysis and storage, the following recommendations could be put forth.

School manager should be constantly trained and retrained on modern techniques of data collection, analysis and storage. This could be done through workshops such as this one.

There is a need to ensure statistics unit in every school and schools should be encouraged to have annual digest of statistics that would be forwarded to the Ministry of Education for compilation to a states digest of school statistics to be published annually.

For efficient data collection, analysis and storage, the following equipment must be provided at the schools: filing cabinets, computers, calculators, and photocopiers.

There is a need to educate the school personnel on the various school records that should be kept and how to keep them accurately.

A very crucial factor to accurate data collection and analysis is the need to educate the school managers about quantitative analysis of school data. Some of the school managers have no formal qualification in quantitative analysis. For them to know how to do it right experts must be made to train them.

REFERENCES

- Durosaro, D.O. (1995) Issues and problems of education data management, in Ehiamezor, E.T. (Eds) Data management in schools and other issues, Benin city, *Nigerian Educational Research Association*, pp178-195.
- Durosaro, D.O. (2004) *Statistical needs for educational management*, Ibadan, Reginasons Book Publishers.
- Fagbulu, M.A. and Duze, M. (1988) *Record keeping for teachers*. Ibadan, Evans Brothers Publishers.
- Halliday, I. (1989) *Teachers management and records in the National Education System: Resource book for Educational Administrators*, London, Commonwealth Secretariat.