



EXTENT OF IMPLEMENTATION OF EDUCATION MANAGEMENT INFORMATION SYSTEMS (EMIS) IN SECONDARY SCHOOLS IN ANAMBRA STATE

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ABSTRACT

The Anambra State secondary school system is undergoing transformation in terms of information management. This has created some challenges which affected the school management in terms of the quality of information being disseminated or used in managing the schools. In the light of this, the researcher was prompted to ascertain the implementation of education management information systems in secondary schools in the state. Four research questions guided the study and four null hypotheses were tested. The study adopted the descriptive survey research design. Population of the study comprised 261 principals in the 261 public secondary schools in Anambra state. The entire population was studied. The instrument for data collection was a researcher-developed questionnaire titled "Implementation of Education Management Information Systems Questionnaire" (PIEMISQ). The instrument was validated by three experts and its reliability was determined using Cronbach alpha method. This yielded internal consistency coefficients of 0.72, 0.74, 0.75 and 0.74 respectively for the four sections of the instrument. Data were collected through direct hand-delivery process using five research assistants. Data collected were analyzed using mean ratings and standard deviations to answer the research questions, while the t-test statistics was used to test the hypotheses at 0.05 level of significance. Findings among others indicated that principals of secondary schools in Anambra State do not implement EMIS in planning staff personnel issues, students' personnel issues, instructional materials and curriculum issues in their schools. It was recommended among others that secondary school principals in the state should undergo in-service training in the implementation of EMIS in planning staff personnel issues, students' personnel issues, instructional materials and curriculum issues in their schools. The implications of the findings were discussed and conclusion was drawn with accompanying suggestions for further studies.

Keywords: Anambra, State, Nigeria, secondary, school, system, Education, Management, Information



INTRODUCTION

Background to the Study

In Nigeria as in other developing country of the world, governments have always accorded a high premium to education. This is well acknowledged in international declarations to which Nigeria is a signatory. The Nigerian constitution in addition to vital legislation and other legal documents also have some sections specifically enacted to promote education. This promotion of the educational sector has given rise to the emerging growth in the population of school children. This growth in education in the country is generally characterized by difficulties and problems in two basic areas of quality of data and the management support system.

The quality of data and information in education has been a focus of concern due to a number of reported errors inaccuracies inconsistencies and misinterpretations (Carlisle, 2016). According to Mali (2015), the inability of management to provide an adequate support system has likewise contributed to the seriousness of the problem. The poor survey structures, frequent changes of concepts and definitions of objectives, the lack of trained and qualified staff, poor direction and organization and a shortage of hardware and software are among the most obvious areas which have not been addressed by managers (Lipham & Hoch, 2014). In the education system, this needs to be addressed using the fast-expanding technology in order to make education being offered relevant.

The fast-changing requirements of education brought about by rapid technological advancement have created a wide gap between what the school provides and what the society demands. In brief, the problems of access, equity, quality and relevance in education can be addressed using various approaches which require a decision support system. To enable the policy and decision-makers to determine the seriousness of these problems, the magnitude and extent of education services needed and the realistic number of resources to deliver these services efficiently and effectively, they must have accurate, reliable and timely information on the state of education in the state and the country at large. The dearth of empirical data generated through a functional and carefully designed system has resulted in the need for an education management information system (EMIS).

According Anderson (2014), an EMIS is an organized group of information and documentation services that collects, stores processes analyze and disseminates information for educational planning and management. It is a collection of component parts that include inputs processes outputs and feed backs that are integrated to achieve a specific objective. In the same view, Carlisle (2016) opined that it is a system for managing a large body of data and information that can be readily retrieved, processed, analyzed, and made available for use and dissemination. It is a tool that uses systems theory, together with developments in computerization, to create a comprehensive approach to the collection and use of vast quantities of information on the



education and training system. As the potential users of data, managers are systematically provided with accurate and timely information so that decision-making, planning, project development and other management functions and operations can be carried out effectively (Mali, 2015). In stressing the importance of EMIS, United Republic of Tanzania (URT, 2011) observed that it is imperative that all educational managers and programme implementers be conscious and capable of performing or managing their information systems either manually or with computers. The latter is preferred considering the new knowledge and power of the information age.

The main purpose of an EMIS is to integrate information related to the management of educational activities, and to make it available in comprehensive yet succinct ways to a variety of users (UNESCO, 2010). These include teachers, principals, curriculum planners, inspectorate officials, financial controllers, planners, policy advisers and political leaders, as well as parents and students. In this way, the combined information resources of the EMIS are at the service of the entire community. According to UNESCO (2008), the specific purpose of EMIS is to integrate the various sources of educational management information into one coordinated system to serve the entire country.

According to UNESCO (2010), every country has some kind of functioning "EMIS" no matter how limited and rudimentary the data collected may be. In some poorer countries, the EMIS is highly manual. An annual statistical report may be the principal manifestation for general public consumption. In establishing an EMIS, existing administrative units and services - e.g., education statistics units, or those that manage teachers' salaries, financial accounts and other administrative information - would not be merged physically or organizationally (URT, 2011). Instead, efforts would be devoted to rationalize and strengthen existing structures and processes and to improve the coordination of information flows (Cole, 2013). All activities in the handling of educational management information are to be placed and coordinated within the same EMIS network. According to Good (2013), a network structure is an essential part of an EMIS. It is built around the need to link together – to facilitate the flow of information - all of the agencies and individuals involved in the collection, processing, storage, analysis, dissemination and use of education information sound or informed decision-making.

Managing education through informed decision-making requires the availability of accurate and timely information which links together resource inputs to education teaching and learning conditions and processes and appropriate indicators of the knowledge acquired by students (URT, 2010). According to UNESCO (2008), in some countries the widespread use of information-based decision-making has resulted in more effective and efficient planning and the identification of new information needs. In others however failure to supply information that is timely and reliable has contributed to management inefficiencies and reluctance on the part of decision-makers to use information. For example, in Tanzania (also applicable to Nigeria) some State Ministries of Education know that data collection from most does not function properly and thus they do not



trust it (URT, 2010). URT further stated that this is also true of other senior decision-makers in education and other ministries. Yet, paradoxically, school principals and other education managers sometimes suffer from too much information this is not useable or timely. For example, valuable findings from an annual school census may not be fully exploited because of the large quantity of data collected (URT, 2011). Also, the data may be collected, tabulated and disseminated in a form difficult to interpret and use especially for people with limited understanding of statistics (UNESCO, 2010). There is a need for well-organized data presentation and data interpretation standards to provide managers with useful and relevant information (Mali, 2015). This suggested the establishment of education management information systems (EMIS).

Ideally in Nigeria, the design and establishment of an EMIS is expected to be preceded by appropriate policy development legislation and relevant administrative decisions (Campbell, 2018). Again, government commitment through the Ministry of Education is of major importance in the first instance. This ideal prerequisite situation is particularly necessary where EMIS is to be established by unifying and expanding existing information structures and services. According to UNESCO (2010), in some countries, these services already undertake independent ongoing information activities for which they have sole responsibility. Hence a set of well coordinated and clearly defined legislative and administrative measures would be the first requirement in order to bring these services together under the same EMIS. This was achieved in Nigeria in 2007 with the establishment of EMIS policy in the country.

A vibrant, robust and functional EMIS is critical for ensuring effectiveness and efficiency in the education sector at the school, local government, state and national levels (Federal Ministry of Education, FME, 2009). Furthermore, FME (2009:9) stated that the purpose of EMIS is to support the achievement of the goals of education as articulated in the National Policy on Education based on the following objectives:

1. streamlining the data flow process from school to LGA to State to the Federal level data relating to education inputs, activities, teachers and student-based outcomes;
2. responding, in a timely manner, to the administrative, management and policy information needs appropriate to the roles of schools, LGAs, States and the Federal Ministry of Education in the educational system;
3. developing and reporting on key indicators to monitor the achievement of national educational standards and annual targets of:
 - a. LGAs at the school and school committee levels
 - b. States at the LGA level
 - c. National at the State level; and



4. Providing the basis for the Federal Ministry of Education to report on the status of education in Nigeria using national and international benchmarks and comparative global reporting and analysis.

In order to achieve the above objectives, school principals play important roles in terms of development and implementation of EMIS. The sequential activities necessary for the development and implementation of a functional EMIS in schools have been highlighted by FME (2009). First is definition of the national development goals; statement of mission and objectives of the education system; and setting short and long-range targets. This is followed by policy decision for purposes of implementation and monitoring. The third stage is identification of data needs and requirements while the fourth stage is the establishment of databases and the design of monitoring/data gathering forms. After this come data and information collection and data processing, followed by data dissemination and report generation. The last stage for development and implementation of EMIS is evaluation of the output. The results of the evaluation process are the basis for the strengthening of the system. In the light of the above, it is necessary to assess principals' implementation of EMIS in their schools.

Assessment, according to Ogunu (2000) involves making quantitative and qualitative judgments about the extent to which a programme implementation satisfies set criteria or standards. In this regard, assessment as a process which systematically and objectively attempts to determine the relevance, efficiency, effectiveness and impact of project activities in the light of set objectives. In this study, assessment means a control system, allowing for determination of progress of principals in the implementation of EMIS in their schools.

In the Nigerian context, a principal is the manager or the administrative head of secondary school (Anyamebo, 2015). He is in charge of administering the day-to-day business of the school. According to Pathak (2008), a principal is the chief executive or head of a secondary school. He manages the human and material resources of the school. Anukam and Anukam (2006) that school principals are in charge of staff management, students' management, instructional programmes management, school financial management, school infrastructural management and management of school-community relationship.

In the implementation of EMIS in secondary schools, UTR (2010) and UNESCO (2008) posited that the principals are expected to effectively control matters relating to staff, students, school finance, accounting, achievement and mental measurement, supervision, guidance services, curriculum construction, building and housing problems, community relation and other technical activities involved in modern high school administration through proper documentation and transmission of accurate data. Furthermore, according to UNESCO (2010) and URT (2011), the basic issues for consideration in the implementation of EMIS are those that concern the operational tasks areas of school management. In this study, they include: staff personnel issues, student



personnel issues, curriculum and management of instructional materials. The aim is to assess the extent the principals have used EMIS in managing them.

Staff personnel in secondary school system comprise all teaching and non-teaching staff. Members of staff need to be current in the subject matter and in new techniques of teaching. According to Murgor (2015), most of the ICT technical staff initial training was not in computers, but in other technical fields such as electronics, librarianship, or other education courses and later on switch over to managing computers, creating a continuity and credibility gap between professions. It is the principal's responsibility to establish a process that will ensure that every staff contributes maximally to the effectiveness of the school. EMIS help the principal in determining performances of teachers and success of the school (Telem & Buvitski, 2005). This can be achieved through a programme of staff development. The need to train and or develop members of staff in school emanated from the need to correct deficiencies or to keep them abreast with new development and emerging challenges that relate to their job performance. Instructively, principals' implementation of EMIS in staff personnel management is a precursor to students' personnel management.

Student personnel management involves assisting students to perform through creation of good environment for learning, supportive aids like teaching facilities, good classroom, sport facilities and students' clubs and unions. Accordingly, Quimn (2002) reported that instructional leadership roles of the principals in terms of providing resources, instructional support, communication, and being physically present at school are essential to providing an atmosphere that enhanced students' successes and academic achievements. More importantly, the principals of the 21st century education through the use of EMIS are required to encourage, motivate and energize the students towards the creation of effective learning environments leading to continuous improvement in schools and students' performances. Expectedly, continuous improvement of students' performances is sequel to a proper curriculum and instructional management. This brings to the fore the use of EMIS by principals in handling issues related to curriculum management.

Curriculum management is also an administrative practice of school principals. Sun, Geemers and Joag (2007) affirmed that national goal setting in terms of students' outcomes which were reflected in the national curriculum and school text books was a key factor that influenced students' performance. Instructively, information regarding students' performance can be recorded using EMIS. Egwunyenga (2009) observed that not all information can be considered as records until they satisfy such characteristics as genuineness and authenticity, that is, the information that records give must be true, correct and original; records must be comprehensive, accessible and secured. Matters relating to curriculum management cannot be concluded without reference to instructional materials.

Instructional materials refer to all the items that can help the teacher to accomplish the teaching task. These items include audio materials, visual materials and audio-visual materials. Instructional materials are very vital to the achievement of educational objectives. Accordingly, principals are



expected to use EMIS in guiding the teachers to use instructional materials judiciously and guard against the over-utilization of instructional materials. EMIS implementation could be affected by school location.

The level of implementation of EMIS by principals in terms of staff personnel management, student personnel management, management of instructional material and curriculum and instructional management in Anambra state seem to differ based on the location of the existing schools. Thus, in Anambra state, secondary schools are located in both urban and rural areas. Most secondary schools especially in the rural areas do not have electricity or any alternative power supply, yet, EMIS cannot function effectively without power supply. Again, some of the schools both in urban and rural areas lack facilities to accommodate EMIS equipment. This leads to poor data generation and management.

According to FME (2009) the bane of the education system is the inability to produce credible data on time which has its root in the fact that schools lack everything that is basic to data generation. The manifestations, according to FME (2009:8) include: almost total lack of school record books; teachers who have not been trained to keep records; teachers who do not understand why they should keep these records and fill the forms that come to them regularly; lack of monitoring to expose non-compliance; absence of any serious sanction for failing to perform; pressure from various sources for schools to falsify educational returns; and reliance on out-dated technology.

Apart from the negative manifestations from the schools, there are also non-cooperation with accredited authorities by private school proprietors and other independent managers of some educational institutions; lack of human capacity; lack of appropriate equipment; and lack of funds for procuring even the most basic item to deliver a credible EMIS across the country (FME, 2009), Anambra state inclusive.

The existing situation particularly in Anambra state is worrisome. In most schools in the state, the filing systems remain manually based and disorganized. In addition, schools and villages that are essentially the sources of data and information are highly dispersed and isolated by seas, rivers, forests and other natural and manmade barriers. The transportation and communication facilities are not able to facilitate the transmission of reports from the source to the users. In addition to the above, Aniemeka (2017) reported that the trends in enrolment indicate the rapid expansion of the formal and non-formal education sectors which makes it difficult to keep track of developments in the education system in Nigeria and Anambra state in particular.

The emerging demands for reliable, up-to-date and timely data and information by local and international users have alerted data producers and providers to improve their management efforts to meet these demands. This has resulted in disparities in the provision of education in the state. According to Anyamebo (2015) the disparities are further worsened by lack of information that would describe objectively the pace of progress and resource requirements between and among



education zones, local governments, townships and villages. In Nigeria and Anambra state in particular, the economic situation has reached a critical level which in effect has forced the government to reduce educational expenditures (Aniemeka, 2017). As a result, the resources for educational provision have been declining, the demand for both formal and non-formal education has been gaining momentum in the state. According to Agom (2013), the inability of the school system to provide adequate facilities and the needed qualified manpower, the quality of education data has been tremendously affected. In the light of the above, this study assessed principals' implementation of Education Management Information Systems in secondary schools in Anambra state.

Statement of Problem

The National Council on Education (NCE) in 2007 approved EMIS to support the effective management of the education system at the Federal, State, and Local Government levels to improve the performance of the education system as a whole and of students in particular. EMIS is also expected to provide the basis for monitoring the effectiveness and efficiency of the educational system at all levels. For many years EMIS in Nigeria and Anambra state in particular could not perform optimally. Data were either not available or unreliable and could therefore not form the basis for planning and decision making. The data management situation in Anambra state secondary schools, at best, is chaotic as operators in the system have different sets of data for such indicators as enrolments, number of teachers and lots more.

In addition to the above, different agencies and international development partners collect and use different and discordant data on similar indicators. The result is that decision-making is not evidence based. Similarly, no reasonable planning could be done. Personal experience of the researcher showed that the State in particular suffers embarrassments because it could not transmit valid data on critical indicators such as school staff, students, instructional materials, curriculum and instruction to such world bodies as the World Bank, UNESCO and UNICEF. One wonders how EMIS is being implemented in such critical areas.

Matters are not helped by the tendency for the state, local government authorities and schools from which the data originate to falsify or inflate data in anticipation of more federal funding or funds from international donors. All this complicate the data management situation in the state and indeed lead to confusion and huge gaps in availability of data or the reliability of available data. Again, the implementation of EMIS in urban and rural secondary schools in South East states is not known. To clear the confusion and bridge the gap, this study assessed EMIS implementation in secondary schools in Anambra state.



Purpose of the Study

The main purpose of this study is to assess principals' implementation of Education Management Information Systems in secondary schools in Anambra state. Specifically, the study determined extent of:

1. implementation of Education Management Information Systems in staff personnel management issues in secondary schools in Anambra state.
2. implementation of Education Management Information Systems in student personnel management issues in secondary schools in Anambra state.
3. implementation of Education Management Information Systems in instructional materials management issues in secondary schools in Anambra state.
4. implementation of Education Management Information Systems in curriculum management issues in secondary schools in Anambra state.

Justification for the Study

This study when completed is expected to be beneficial to student, principals, policy makers, state governments and future researchers. The study would also provide essential information on implementation of EMIS by principals in secondary schools in Anambra state.

The study would give solace to the diverse needs of students in the sense that the understanding of the implementation of EMIS by principals of secondary schools in Anambra state will equip the students with the necessary and needed intellectuality to work as principals and school managers at graduation. It would also serve the students as authoritative educational material for further research in this study area.

The outcome of the study would also be beneficial to the principals by pooling together and providing them with disparate strands of thought on the implementation of EMIS in the state. This would theoretically contribute to knowledge by supplementing existing literature in emphasizing the need for accurate and reliable educational data and information for the purpose of measuring and guiding the performance of education systems.

For policy makers and general education system, the work would augment the database and also provide scholarly directions for effective education development policy and action. This is because when implementation of EMIS Anambra state is ascertained, it would help in engendering policies that would address the sustainable implementation of EMIS.

The study will be of importance to the state government because it would contribute to the awareness on the state of EMIS in Anambra state and the outcome can be utilized by stakeholders, the state government and various donor agencies to strengthen the process of EMIS in the state for



better management and resource allocation decisions, thereby improving the educational sector in general.

The results of the study would help future researchers as it would bring to their knowledge whether there are differences in urban and rural principals' implementation of EMIS in the area of the study. When this is done, they would be motivated for further research in the same area and other areas.

For this work to achieve the above, fund is needed. The fund will cover things like instrument construction, validation and reliability test. The fund will also cover the cost of transportation for questionnaire administration and data analysis. The outcome of the research will also be published with fund. The details of the fund needed are shown in the research budget.

Research Questions

The following research questions guided the study:

1. What is the extent of implementation of EMIS in staff personnel management in secondary schools in Anambra state?
2. What is the extent of implementation of EMIS in students' personnel management in secondary schools in Anambra state?
3. What is the extent of implementation of EMIS in instructional materials management in secondary schools in Anambra state?
4. What is the extent of implementation of EMIS in curriculum management in secondary schools in Anambra state?

Hypotheses

The following null hypotheses were tested at .05 level of significance:

1. Principals of secondary schools in urban and rural areas in Anambra state will not differ significantly in their mean ratings on the extent they implemented the EMIS in staff personnel management.
2. Principals of secondary schools in urban and rural areas in Anambra state will not differ significantly in their mean ratings on the extent they implemented the EMIS in students' personnel management.
3. Principals of secondary schools in urban and rural areas in Anambra state do not differ significantly in their mean ratings on the extent they implemented the EMIS in instructional materials management.



4. Principals of secondary schools in urban and rural areas in Anambra state do not differ significantly in their mean ratings on the extent they implement the EMIS in curriculum management.

REVIEW OF RELATED LITERATURE

In this chapter, concepts, theories and empirical studies that are related to the study were reviewed. The review was done under the following subheadings:

Conceptual Framework

- Education Management Information System (EMIS)
- Guideline for Establishing Education Management Information System in Schools
- Stages in the Development of Education Management Information System
- Implementation of Education Management Information System

Theoretical Framework

Information Systems Theory (IST)

Empirical Studies

- Education Management Information System
- Staff and Students Personnel Management Issues
- Curriculum and Instructional Materials Management Issues

Summary of Review of Related Literature

Conceptual Framework

Education Management Information System (EMIS)

The acronym EMIS stands for "Educational Management Information System". Patel (2007) stated that EMIS is the information system which materialized in South African Education to bring about improvement in information disparities which existed prior to 1994. It is a collection of component parts that include inputs processes outputs and feed backs that are integrated to achieve a specific objective. Wako (2003) opined that the Education Information System is a concept imported from the business world that is used to process information to ensure effective management of education.

According to Koofi (2007), EMIS is an "organised group of information", a centre or a unit that collects, stores, integrates, processes, organises, analyses, manages and distributes information for educational planning and management. Koofi added that EMIS includes the concept of comprehensive data, which are accessible by computer and available for analysis, for processing and decision-making purposes. It is responsible for the promotion and use of information for policy



planning and implementation, decision-making, and the monitoring and evaluation of an education system. It provides timely, cost effective and user appropriate information to support educational planning and management (Connal, 2005). It is a system for managing a large body of data and information that can be readily retrieved, processed, analyzed, and made available for use and dissemination (Villanueva, 2003). It is a tool that uses systems theory, together with developments in computerization, to create a comprehensive approach to the collection and use of vast quantities of information on the education and training system. As the potential users of data, managers are systematically provided with accurate and timely information so that decision-making, planning, project development and other management functions and operations can be carried out effectively.

Operationally, EMIS is defined as an organized group of information and documentation services that collects, stores, processes, analyses and disseminates information for educational planning and management. It is an organized, structured and integrated information system which aims to provide information from all related sources required by the management level in enabling them to make precise, effective organizational planning, directions, control and also to perform relevant and related activities.

Stages in the Development of Education Management Information System

According to UNESCO (2010) and URT (2011), well-planned and designed EMIS will facilitate the undertaking of sequential activities relative to the development of a functional EMIS, which can be presented in stages as shown below:

First stage: definition of the national development goals; statement of mission and objectives of the education system; and setting short and long-range targets. These are usually reflected in the national development plan of the country. From these goals, the national objectives of education are formulated to synchronize with the national vision for development in a given time frame. The mandates of the Constitution on education and other relevant educational legislation have to be carefully reviewed with reference to the development of the management information system.

Second stage: policy decision for purposes of implementation and monitoring. The resources needed to establish the EMIS are identified at this stage of the development. It is critical to determine the appropriate manpower to operate the system, the cost of services and activities, the overall structure, the timetable of activities and the overall strategies of implementation.

Third stage: identification of data needs and requirements. The necessary data needed to support the various measures in determining the attainment of the objectives of the system shall be carefully identified through consultations with the different sectors, and key official school administrators and other potential data users. This will ensure that the data requirements and needs of the policy and decision-makers and other key users are taken care of while at the same time minimizing overloads of unnecessary data. The specific purpose and use of these data shall be made clear at this stage of the process.



Fourth stage: establishment of databases. A database is an integrated collection of data and information, organized and stored in a manner that facilitates retrieval. Both manual and computer-based databases determine the nature of the files or the filing system. Proper labeling of these databases and the corresponding data elements is necessary for easy viewing and access to the hard/printed copies. The label is patterned after the cluster of similar data or related to the major component of the programme students, teachers, curriculum, finances, physical facilities and equipment, and others.

Fifth stage: design of monitoring/data gathering forms. These forms are designed to capture the required and needed data identified during the third stage of development. The designer of the questionnaire has the option to choose the appropriate modes and channels of collecting data from various sources. Forms are pilot-tested to ensure that the instructions, data definitions and data elements requested are understood by the data providers before these forms are administered on a wider or national scale.

Sixth stage: data and information collection. A Manual of Operation has to be prepared to spell out the essential information about data collection in terms of the objectives the schedule of activities, guidelines for conducting the survey/data gathering, the duties and responsibilities of the monitors/surveyors and supervisors, the specific instructions on how to administer the questionnaire including definition of terms, and the collection or submission of completed questionnaire forms. It is also at this stage that training takes place for those who will be involved in data gathering activities both at the national and sub-national levels for purposes of uniformity and common terms of reference.

Seventh stage: data processing. A system of data verification and control procedures should be applied before processing takes place. These forms are verified as to the accuracy and consistency of the data entries. All data elements are coded according to the system designed by the programmer. A training session may take place at this stage to train data encoders/data entry operators to interpret instructions, define data elements and apply software in uniform ways. The specifications of the reports to be generated from the processed data are also defined at this stage.

Eighth stage: data dissemination and report generation. The packaging of these data into statistical bulletins, compendia, reports, profiles and others will help facilitate the dissemination and use of the data by the users. At the national level, the Ministers, legislators, the members of Cabinets/Parliaments and heads of international bodies need this information for policy making, legislation, programme development and other national concerns. According to Mali (2015), the middle-level managers, including bureaucrats, need it for organization and control, project implementation, budget preparation, programming, monitoring and evaluation. At the operational level, coordinators, local organizations/units and desk offices need information for their day-to-day operations, supervision, reporting, action planning, and advocacy and mobilization activities. The general public, such as the business sector the community, the professionals, the students, the



media and academic or educational institutions are considered interest groups for data consumption and information users who participate in sustaining the development process.

Ninth stage: evaluation of the output. The ultimate end of an EMIS is to produce relevant and timely information of good quality. Towards this end, an evaluation mechanism should be designed to identify the strengths and shortcomings encountered in the development and operation of the EMIS (URT, 2010). The results of the evaluation process are the basis for the strengthening of the system.

Theoretical Framework

One theory titled information systems theory (IST) propelled this study.

Information Systems Theory (IST)

The information systems theory was developed by Tim Bryce in 2009. The assumptions of information systems theory are as follows:

1. Regardless of the type of system, be it an irrigation system, a communications relay system, an information system, or whatever, all systems have three basic properties:
 - A. A system has a purpose - such as to distribute water to plant life, bouncing a communications signal around the country to consumers, or producing information for people to use in conducting business or in the implementation of a programme.
 - B. A system is a grouping of two or more components which are held together through some common and cohesive bond. The bond may be water as in the irrigation system, a microwave signals as used in communications, or, as data in an information system. The cohesive bond enables the group members work together.
 - C. A system operates routinely and, as such, it is predictable in terms of how it works and what it will produce. All systems embrace these simple properties. Without any one of them, it is, by definition, not a system.
2. The sub-systems of the system simply define logically WHAT data must be processed, WHEN it must be processed, and who will consume the information (aka "end-users"), but it most definitely does not specify HOW the sub-system is to be implemented. Figure 1 presents the information systems theory (IST).

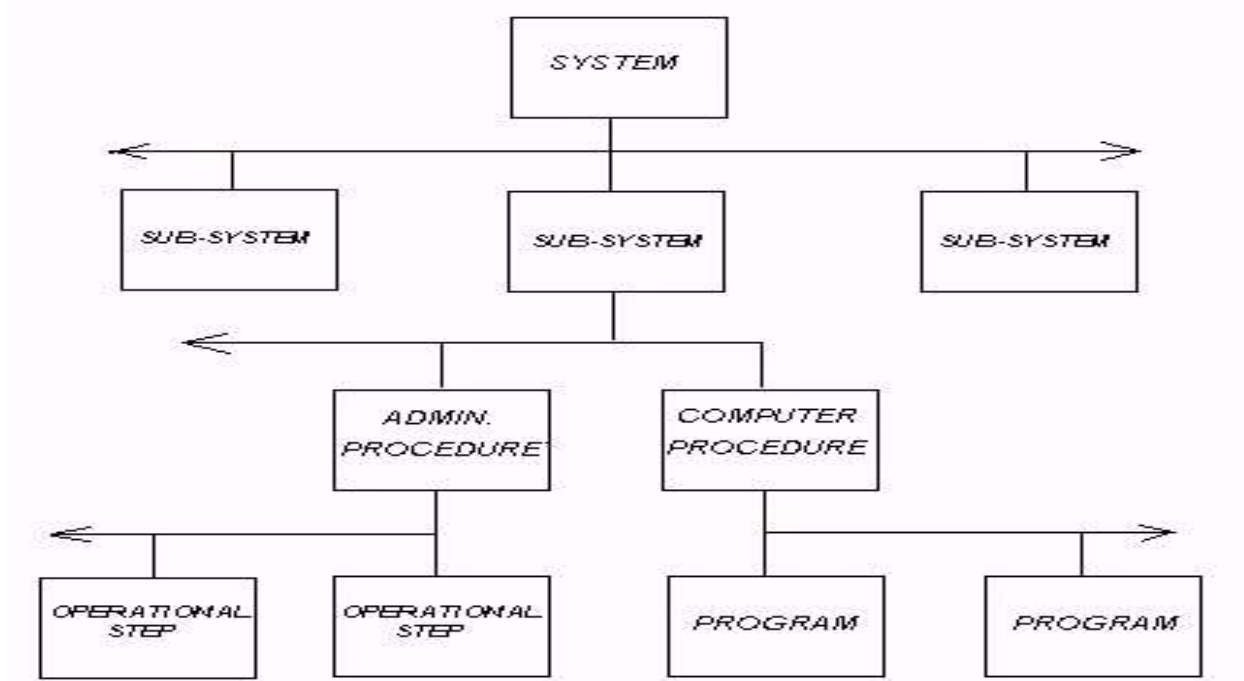


Fig. 1: Information Systems Theory (IST); Source: Tim B. (2009).

According to the theory, developers determine a suitable approach for physically implementing each sub-system. This decision should ultimately be based on practicality and cost effectiveness. Sub-systems can be implemented using manual procedures, computer procedures (software), office automation procedures, or combinations of all three. Depending on the complexity of the sub-system, several procedures may be involved. Regardless of the procedures selected, developers must establish the precedent relationships in the execution of the procedures, either sequentially, iteratively, or of choice (thereby allowing divergent paths). By defining the procedures in this manner, from start to end, the developers are defining the "work flow" of the sub-system, which specifies HOW the data will be physically processed (including how it is to be created, updated, or referenced). Each level represents a different level of abstraction of the system, from general to specific (aka, "Stepwise Refinement" as found in blueprinting). This means design is a top-down effort. As designers move down the hierarchy, they finalize design decisions. So much so, by the time they finish designing the level for a computer procedure, they should be ready to write programme source code based on thorough specifications, thereby taking the guesswork out of programming. The hierarchical structure of an information system is essentially no different than any other common product.

This theory is relevant to the current study. It states how data can be generated and handled in the course of implementation of EMIS. It could be generated manually or through the use of



computers. It also shows how to manage or handle information from all aspects of the school as a system.

Empirical Studies

In this section some studies related and are relevant to the present study are reviewed. They are grouped under EMIS, staff and students, personnel issues and curriculum and instructional materials issues.

Studies on Education Management Information System

A number of studies have been conducted on Education Management Information System (EMIS). These studies are reviewed below.

Al-Mamary and Nor Aziati (2014) examined factors affecting successful adoption of management information systems in organizations towards enhancing organizational performance in Malaysia. Two research questions and two hypotheses guided the study. The researchers surveyed 276 respondents using a structured questionnaire. Their data was analyzed using factor analysis and regression model of the ordinary least square. Findings revealed that technological factors, organizational factors, people factors, that affect MIS adoption in organizations. Their study is related to this study on the ground that it centre on adoption of MIS but it differs from this study in that this study assesses the implementation of Education Management Information System (EMIS) by principals in the rural and urban areas.

Munirat, Mohammed and Kazeem (2014) investigated the impact of Management Information System (MIS) on the Performance of Business Organization in Nigeria. The study also took cursory look at the various challenges of MIS in Nigeria. It was guided by three research questions and two hypotheses. The study was a descriptive survey on 320 selected firms using a structured questionnaire. The data for the study were analysed using the Z-test. Findings revealed that lack of MIS software and program, lack of innovation and invention, poor government policies, poor technological equipment and advancement, lack of managerial skill on ITS, poor knowledge of information technology, rigidity in MIS process and poor data base management. The findings of the study were related to the present study as it took cursory look at the various challenges of MIS in business organization but it differs from this study in that this study compares and assesses the implementation of Education Management Information System (EMIS) by principals in the rural and urban areas.

Shah (2014) examined the impact of management information systems (MIS) on school administration in Nigeria: What the literature says. The study is a content analysis on the Impact of MIS in school administration. The study highlighted both the success and challenges of MIS on school administration and management. The positive impact of MIS were identified to include: better accessibility to information, more efficient administration, higher utilization of school



resources, reduction in workload, better time management, and improvement in the quality of reports. The challenges to MIS use include: lack of time, lack of confidence or skills, lack of training, lack of senior management support, and lack of technical support. However, this study compares and assesses the implementation of Education Management Information System (EMIS) by principals in the rural and urban areas.

Staff and Students Personnel Management Issues

Udeani (2008) carried a study on the principals' application of personnel management skills in Enugu state. The purpose of the study was to determine the extent to which the principals applied the skills for effective personnel management. The study adopted the descriptive survey research design. The target population was made up of all the 253 principals in the state and information about them was elicited from the teacher. Six research questions and three null hypotheses guided the study. The instrument titled questionnaire of personnel management skills of principals was used to get responses from the teachers. This was rated using a modified Likerts 4 points rating scale. A mean score of 2.50 was accepted. The mean and standard deviation were used to answer the research question while the t-test was used to test the null hypotheses at 0.05 significant level.

The result revealed that the principals applied the personnel management skills effective staff orientation, motivation, delegation of duties, staff professional development, human relations, staff security only to the least extent. The study further revealed that there is no significant difference in the mean ratings of the principals' application of personnel management skills for effective for staff motivation, human relations and staff professional development with regards to school location, principals' gender and experience in that order. This study is related to the current study. Both used the same descriptive design and also investigated staff personnel management. They however differ in some respects. The former investigated principals' application of personnel management skills for effective for staff motivation but the latter focused on principals' application of EMIS in staff personnel issues among other variables.

Omeje (2006) studied improvement strategies for students' personnel services in Enugu state post-primary schools' management board. The study answered five research questions and tested five null hypotheses at 0.05 level of significance. The study was a descriptive survey and the respondents consisted of 225 senior administrative staff and 231 principal of Enugu state post - primary schools management board. A twenty-nine-item questionnaire was used as the instrument for data collection. Mean scores were used to answer the research questions, while t-test was used to test the five null hypotheses formulated.

The major findings of the study showed among others, that the improvement strategies for ensuring the recruitment of qualified staff include advertising teaching vacancies, basing appointment strictly on academic qualifications, good health and subjecting the candidates for appointment to oral and written tests in English and in the area of specialization of each candidate. The results of



the study also revealed that no significant difference exists between the opinions of the senior administrative staff and the principals of schools on the recruitment of qualified staff, staff welfare, staff appraisal, staff development/in-service training and disciplines of staff. The study by Omeje is related to this work. They both studied students' personnel management using descriptive survey. They however differ in respondents. The former used senior administrative staff as respondents while the current study utilized principals as its respondents. Again, the former investigated improvement strategies for students' personnel services in Enugu state post- primary schools' management board while the current investigated extent of principals' application of EMIS in students' personnel issues.

Nwadialo (2004) investigated the personnel management practices of principals in the public and private senior secondary schools in district six of Lagos state. The study employed a descriptive survey research designs. The population is comprised of 4,026. A total of 156 respondents were sampled for the study using random sampling techniques representing 150 teachers and 6 principals. It was further categorized into 90 teachers in the public schools, and 60 teachers in the private schools and 6 principals in the six sampled schools in the three zone of district six of Lagos state. Five research questions and three null hypotheses guided the study. The instrument used for data collection was questionnaire titled personnel management practices of principals in the public and private secondary schools (PMPPPS). The instruments were analyzed using mean and standard deviation for the research question while the null hypotheses were analyzed with t-test statistics at 0.05 level of significance. The results of the data analysis revealed that principal and teachers agreed that availabilities of facilities and equipment are relevant in actualizing educational goals since there is a relationship between academic performance of student and nature of the school plant. It was also found that supervisory and monitoring services play very important roles in personnel management practices in schools as they improve instructional effectiveness. This reviewed work is related to the current study. Both of them investigated personnel management practices. Both of them also used descriptive research design. They however differ in some respects. The current is an assessment study conducted in public secondary schools while the former is a comparative study involving both public and private secondary schools.

Ogakwu (2004) compared the students' personnel practices of public and private secondary schools in Enugu state with emphasis on planning practices, recruitment procedures, extent of provision of required physical facilities and equipment, sources of fund, school community relationship, supportive role of parent teachers' association (PTA), supervisory control measures and communication process carried out within the schools. To carry out the study, eight research questions were posed and eight hypotheses were formulated and tested at 0.05 level of significance. An 80-item questionnaire was administered to 289 principals and 824 teachers in public and private secondary schools in Enugu State.



The data obtained from the study were analyzed using mean, standard deviation, ANOVA and t-test. The findings of the study indicated that planning is made well ahead of time by ministry of education, completed before the commencement of public secondary schools while planning in private schools were not made ahead of time and that public secondary schools recruit most professional teachers while private secondary schools recruit most unprofessional teachers. This study is related to the current work. They studied personnel practices in secondary schools using descriptive research design. They however differ in approach. The former compared the students' personnel practices of public and private secondary schools but the current assessed principals' application of EMIS in students' personnel issues as part of the variables.

Curriculum and Instructional Materials Management Issues

In 2007, Jahangiri, Mucciolo, Choi and Spielman carried out an assessment of curriculum implementation in the U.S. Dental Schools and the value of triangulation. The purpose of the study was to identify commonly used methods of assessing teaching effectiveness and to suggest the use of a triangulation model for evaluating teaching effectiveness. A twelve-question multiple-choice survey was created with four options per question plus a comments section.

The survey was sent electronically via the American Dental Education Association (ADEA) to academic deans of all U.S. dental schools in July and again in August, 2007. Each school was allowed only one submission. The surveys were tabulated and analyzed to determine commonly used methods of teaching effectiveness for an actual response rate of 63 percent.

The major findings of the study are as follows:

1. The triangulation method for assessing teaching effectiveness was potentially performed by only 19% of the responding schools;
2. The three most commonly used evaluation methods identified as “performed routinely” were all from the student evaluation category (written evaluations, exit surveys and exam results);
3. The self-evaluation category was found to be least utilized area of assessment (31%) as compared to the peer (78%) and student (81%) categories.
4. Fewer than half of the responding schools routinely evaluated clinical teaching effectiveness (42%); and
5. To improve the assessment of teaching effectiveness, the use of a triangulation model is suggested, whereby evaluation methods from all three categories of students, peers, and self- are performed routinely.



This work is related to the current study. Both of them studied curriculum as a variable. They however differ in some respects. The former was an assessment of curriculum implementation but the current assessed principals' application of EMIS in curriculum management issues.

Jing-Ming (2009) investigated the effects of multimedia as instructional resources on the Reading Comprehension and English Words Learning of Taiwanese Students. The main purpose of this study was to improve the reading comprehension and to increase the English vocabulary of students with the sub-goal of encouraging them to strive for success. The design of the study was quasi-experimental. The area of the study was Taichung City in Taiwan. The population of the study was all the English Language in elementary schools in Taichung City. The sample for the study comprised eight (8) students in elementary schools in Taichung city. The instrument for the study were Assessment of English word recognition, English word listening, comprehension, English word lip-reading administered as multiple-choice questions, Likert scaled attitude questionnaire, and multimedia stories of Taiwanese including famous models, professors, teachers, athletes, a computer programme with an illustrator and leader. The experimental procedure involved two itinerant teachers visiting the eight students separately for two hours a week, and taught the students a story for about an hour each week. The results revealed that their attitude was positive and significantly improved toward English language learning. This reviewed work is related to the current study. They focused on instructional materials. They were also carried out at secondary school level. Their major difference is in the area of design. The design of the reviewed study was quasi-experimental and ANOVA was used in testing the hypotheses. On the other hand, the current study adopted descriptive research design and the hypotheses were tested using t-test.

Gentry, Chinn, and Moulton (2005) examined the effectiveness of instructional multimedia materials when used with children who are deaf. The purpose of the study was to access the relative effectiveness of print, sign, and pictures in the transfer of reading related information to children who are deaf by means of personal computers and CD-ROM generated stories in four different formats: print only, print plus pictures, print plus sign language, and print plus pictures plus sign. The design of the study was a repeated measure design. The area of the study was Louisiana and Texas. The population of the study consists of all the deaf students in Louisiana and Texas, United States of America. The sample for the study comprised twenty-eight deaf students between ages 9-18 who were recruited from the mainstream settings and from residential, non-integrated school settings. Media formats included printed words, pictures and sign language. Multimedia options allowed the participants to access specific prompts presented in each of four treatments:

- Treatment 1: print only
- Treatment 2: print and pictures
- Treatment 3: print and digital video of sign language
- Treatment 4: print, pictures, and digital video of sign language



Analysis of variance (ANOVA) was used in data analysis.

The results of the study revealed significant differences between treatments at a p value of .00001 ($df = 3$; $F = 22.27$). That is, participants performed significantly differently when retelling stories presented to them through the different treatment options. There were no significant differences between treatment 1 and treatment 3 nor were there significant differences between treatment 2 and treatment 4. The results also indicated that comprehension was weakest when the stories were presented in a print-only format but comprehension was strongest when stories were presented in the print with pictures. The work by Gentry, Chinn, and Moulton is related to the current study. The two works focused on instructional materials. They however differ in design and respondent. The former was quasi-experimental with deaf students as respondents but the latter is a descriptive study with principals as respondents.

Summary of Review of Related Literature

The literature was organized under the following headings; conceptual framework, theoretical framework and empirical studies. Concept of Education Management Information System was reviewed. The stages in the development of education management information system were also discussed. The theory that propelled the work was also reviewed. From the literature reviewed so far, researchers have investigated studies Educational Management Information System from various stand points and varying literary perspectives. However, there is paucity of literature on the assessment of principals' implementation of Educational Management Information System (EMIS) particularly in South East states, thus, creating strands of gap to be filled by this study. Firstly, this study fills a geographical gap, in the sense that none of the previous studies assessed principals' implementation of EMIS in South East states in particular. Secondly, it also fills a contextual gap because the studies were not conducted on school principals which are the primary source of data. Furthermore, considerable issues in EMIS implementation (staff personnel management, students' personnel management, instructional materials management and curriculum and instructional management) were not studied in the previous studies. In order to bridge the aforementioned gaps this study therefore assessed principals' implementation of education management information system in secondary schools in South East States with a focus on staff personnel management, students' personnel management, instructional materials management and curriculum and instructional management.

RESEARCH METHOD

This chapter presents the procedures adopted for the study. This was discussed under the following sub-headings: research design, area of the study, population of the study, sample and sampling technique, instrument for data collection, validation of the instrument, reliability of the instrument, method of data collection and method of data analysis.



Research Design

The descriptive survey research design was adopted for this study. According to Nworgu (2015) a descriptive survey design is research in which data are collected from a sample of a population with a view of finding out the relative opinion, belief, attitude, and status of that population about a phenomenon. This design is deemed appropriate for this study because the researcher collected data from the respondents through a few representatives and analyzed them in order to assess principals' application of Education Management systems (EMIS) implementation in secondary schools in Anambra state. Again, Luena (2017) and Nwangwu, Ememe and Obike (2013) who carried out similar studies utilized descriptive survey research design.

Area of the Study

This study was carried out in Anambra state. Anambra is a state in south-eastern Nigeria. Its name is an anglicised version of the original 'Oma Mbala', the native name of the Anambra River. The capital and seat of government is Awka. The state is bounded by Delta state to the west, Imo state to the south, Enugu state to the east and Kogi state to the north. Anambra is the eight most populated state in the Federal Republic of Nigeria. The state has a population of 4,055,048 people according to the last census (NPC, 2006) with a land mass of 1,870 square meters.

There are 21 Local Government Areas in the state and the indigenous language of the people is predominantly Igbo. The inhabitants of the area are mainly civil servants and business men, the rural areas are, however, predominantly inhabited by farmers, petty traders and craftsmen. Anambra state comprises six education zones namely Aguata, Awka, Nnewi, Ogidi, Onitsha, and Otuocha education zones. The State Post Primary Schools Service Commission at Awka centrally controls public secondary schools in the state.

The researcher decided to use Anambra state as the area of the study because the state has EMIS offices in the ministry, PPSC headquarters and in the zones. Secondly, the state mandates principals of secondary schools to embrace EMIS. The researcher observed problems of data processing in the state education sector and information management problems especially in public secondary schools in Anambra State.

Population of the Study

The population for this study was 261 respondents. This is made up of all the 106 principals in urban and 155 principals in rural public secondary schools in the State. The data are as obtained from the Post Primary School Service Commission (PPSSC) Anambra state in Awka in June, 2019. The population distribution of the principals according to education zones is shown in the Appendix.



Sample and Sampling Technique

There was no sample. The population size was manageable and as a result used as the sample of the study. Thus, the entire 261 respondents that formed the population of the study were studied.

Instrument for Data Collection

The instrument for data collection is a structured questionnaire designed by the researcher through interaction with experts and review of related literature in relation to the purpose and research questions guiding the study. The instrument consisted of two parts: A and B. Part 'A' dealt with background information of the respondents which encompasses personal data while Part 'B' contained items that addressed the core subject matter of research question and it's divided into four sections, A, B, C and D. Section 'A' sought information on principals' implementation of EMIS in staff personnel issues; Section 'B' focused on principals' implementation of EMIS in student personnel issues. In the same manner, Section 'C' contained items on principals' implementation of EMIS in instructional issues; while Section 'D' contained items on principals' implementation of EMIS in curriculum issues in the schools. The questionnaire items are structured on a four-point rating scale of Very High Extent – 4 points, High Extent – 3 points, Low Extent – 2 points and Very Low Extent – 1 point. The instrument contained 30 items.

Validation of the Instrument

To ascertain the validity of the instrument developed for the study, the purpose of the study, research questions, research hypotheses and the instrument were given to three experts, two in the Department of Educational Management and Policy, and one in the Department of Educational Foundations (Measurement and Evaluation Unit), all in Chukwuemeka Odumegwu Ojukwu University, Igbariam Campus for validation. They were requested to validate the instrument with reference to the appropriateness of the items, their wordings and construct. The experts were also requested to examine the items in respect of their relevance, clarity, content coverage and their appropriateness in addressing the purpose of the study. The inputs of these authorities were incorporated by the researcher in modifying the items and in producing the final copies of the instrument. For instance, the expert in measurement and evaluation suggested the restructuring of the topic, research questions and hypotheses. The purpose of the study was also restructured based on the advice of the same expert. For all the items, the same expert suggested making each item personal since each respondent knows about what directly relates provision of instructional resources. The expert also restructured the response options from SA, A, D, and SD to VHE, HE, LE, and VLE. In the same manner, the expert in Educational Management and Policy suggested that item 10 of the original draft be moved to another cluster. Again, the expert in measurement and evaluation suggested the restructuring of the lead statements and re-arrangement of some of the items.



Reliability of the Instrument

The reliability of the instrument was established using Cronbach alpha method. Copies of the questionnaire for the study were administered to twenty-five (25) principals of secondary schools in Enugu State which were outside the area of study. The internal consistency of the items in the clusters was determined using Cronbach statistics. The alpha coefficients of 0.72, 0.74, 0.75 and 0.74 with the overall co-efficient of 0.74 were obtained respectively for the sections A, B, C and D. In line with Nworgu (2015) who stated if the correlation co-efficient obtained in an instrument is up to .60 and above, the instrument should be considered good enough to be used for a study. Therefore, the instrument was deemed reliable.

Method of Data Collection

The researcher administered the instruments directly to the respondents with the help of five research assistants. The research assistants were instructed on how to distribute and collect copies of the questionnaire from the respondents. Before moving to the respondents, permission was sought from the principals through a letter of introduction from the researcher's Head of Department. The researcher and the assistants met the respondents in their various locations and copies of the questionnaire were administered on them. The researcher and the assistants waited for the respondents to attend to the questionnaire and offered assistance where necessary. The completed copies were collected on the spot. Follow up visits were made in some cases where the respondents could not submit on the spot. The distribution and collection of the questionnaire lasted for two weeks. All the 261 copies of the instrument administered were correctly filled, retrieved, and used for data analysis.

Method of Data Analysis

Mean scores and standard deviations were used to answer the research questions while t- test was used to test the hypotheses at 0.05 level of significance. In analyzing the data for research questions, mean rating of 2.50 was used in taking decisions. Mean ratings from 2.50 and above were regarded as high extent while those below 2.50 were regarded as low extent.

In analyzing the data for the hypotheses, the t- test was used to test the hypotheses at the 0.05 level of significance. The choice of t-test is in line with the recommendation of Howith and Cranner (2011) that the use of t-test is suitable for a sample with two variables and emphasis is not on effect or relationship. Since the sample has two variables and emphasis in the study is not on effect or relationship, the choice of t-test is therefore appropriate for the study. As a rule, the hypothesis was not accepted if the calculated t-value was equal or greater than the table t-value while when the calculated t-value was less than the table t-value, the null hypotheses was accepted.



PRESENTATION AND ANALYSIS OF DATA

In this chapter, data collected were presented and analyzed. The results were presented according to the research questions and hypothesis.

Research Questions

Research Question1: What is the extent of principals' implementation of EMIS in planning staff personnel issues in secondary schools in Anambra State?

Table 1: Mean Ratings on Principals Implementation of EMIS in Staff Personnel issues in Secondary Schools in Anambra State. N=261

S/N	EMIS Implementation in Staff Personnel Issues. I use EMIS	Mean	Sd.	Remarks
1	in ascertaining the number of academic staff in my school.	2.62	0.11	High Extent
2	in ascertaining the number of non-academic staff in my school.	2.51	0.10	High Extent
3	in planning the salary of the staff.	1.61	0.09	Low Extent
4	in identifying absentee members of staff.	2.32	0.11	Low Extent
5	in ascertaining and confirming the length of service of every member of staff.	2.53	0.09	High Extent
6	in identifying regular attendee members of staff for the purpose of re-enforcement.	2.54	0.10	High Extent
7	for a daily record of the classroom activities of academic staff.	2.11	0.08	Low Extent
8	for a daily documentation of activities of non-academic staff.	2.09	0.12	Low Extent
Mean of Means		2.29	0.1	Low Extent

Table 1 presents principals mean ratings on their implementation of EMIS in staff personnel management issues in secondary schools in Anambra State. Item 1 has mean rating of 2.61 and sd



of 0.11, item 2 has mean rating of 2.51 and 0.11 sd. Furthermore, item 5 has mean rating of 2.53 and sd of 0.09 while item 6 has 2.54 mean rating with sd of 0.10. All the mean ratings for these items 1; 2; 5 and 6 are above the cut-off mark of 2.50 and indicated that the principals use EMIS in ascertaining the number of academic and non-academic staff in their schools. They also implement EMIS in ascertaining and confirming the length of service of every number and staff are as well in identifying regular attendee numbers of staff for the purpose of reinforcement.

On the other hand, item 3 has mean ratings of 1.61 and sd of 0.09. Similarly, item 4 has mean ratings of 2.32 and sd of 0.11 while item 7 has mean ratings of 2.11 with sd. of 0.08 and item 8 has mean ratings of 2.09 with sd of 0.12. All the mean ratings for these items 3; 4; 7 and 8 are below the cut-off mark of 2.50 and indicated that the principals do not implement EMIS in planning staff salary, in identifying absentee member of staff for daily records of the classroom activities of academic staff and for daily documentation of activities of non-academic staff.

The standard deviation scores of the principles ranged between 0.08 and 0.12 with an overall mean of 0.1. This shows that the scores cluster around their mean and indicated that the principals did not vary significantly in their ratings. Again, the mean of means for the items is 2.29. This falls below the cut-off mark of 2.50 and indicated that the principals do not use EMIS in staff personnel management issues in secondary schools in Anambra State.

Research Question 2: What is the extent of principals' implementation of EMIS in planning student personnel issues in secondary schools in Anambra State?

Table 2: Mean Ratings on Principals Implementation of EMIS in Student Personnel Issues in Secondary Schools in Anambra State. N=261

S/N	EMIS Implementation in Student Personnel Issues. I use EMIS	Mean	Sd.	Remarks
9	in ascertaining the number of students in my school.	2.24	0.12	Low Extent
10	in ascertaining the number of WAEC candidates in my school.	2.43	0.09	Low Extent
11	in collecting the academic records of students in my school.	1.47	0.11	Low Extent
12	in analysing the academic performance of students on a termly basis in my school.	2.36	0.11	Low Extent
13	in planning the number of students to admit at the beginning of a new academic session.	2.04	0.10	Low Extent
14	in identifying absentee students in my school.	2.63	0.12	High Extent



15	for the dissemination of termly results of students.	2.52	0.11	High Extent
16	for keeping records of behavioural disposition of students for appropriate decisions in my school.	2.56	0.10	High Extent
Mean of Means		2.41	0.11	Low Extent

Results in Table 2 indicate principals' ratings on their use of EMIS in students' personnel management issues. Item 14 has mean rating of 2.63 and sd of 0.12; item 15 has mean rating of 2.52 and sd of 0.11 while item 16 has mean rating of 2.56 and sd of 0.12. The mean ratings for items 14, 15 and 16 are therefore above the cut-off mark of 2.50 and indicated that the principals use EMIS in identifying absentee students in the schools, they use EMIS for the dissemination of termly results of students and for keeping records of behavioural disposition of the students for appropriate decisions in the school.

On the other hand, item 9 has mean rating of 2.24 with sd of 0.12; item 10 has mean rating of 2.43 with sd of 0.09; item 11 has mean rating of 2.47 with sd of 0.11; item 12 has mean rating of 2.36 with sd of 0.11 while item 13 has mean rating of 2.04 with sd of 0.11. All the mean ratings for items 9, 10, 11, 12 and 13 are below the cut-off mark of 2.50 and indicated that the principals do not use EMIS in ascertaining the number of students or the number of WAEC candidates in their schools. In the same manner, they do not implement EMIS in analyzing the academic performance of students on termly, basis or in planning the number of students to admit at the beginning of a new academic session.

The standard deviation of the principals ranged between 0.09 and 0.12 with the overall Sd. of 0.11. The Sd. mean of means indicate that the principal did not vary significantly in their ratings of the items. Similarly, the mean of means for the items is 2.41 which fall below the cut-off mark of 2.50. This indicates that the principals do not use EMIS in students' personnel issues in secondary schools in Anambra State.

Research Question 3: What is the extent of principals' implementation of EMIS in planning instructional materials t issues in secondary schools in Anambra State?

**Table 3: Mean Ratings on Principals Implementation of EMIS in Instructional Material Issues in Secondary Schools in Anambra State. N=261**

S/N	EMIS Implementation in Instructional Material Issues. I use EMIS	Mean	Sd.	Remarks
17	in planning the instructional materials for instructional delivery.	2.30	0.11	Low Extent
18	in managing instructional materials in my school.	2.51	0.12	High Extent
19	in documenting the instructional materials that are used over a period of time.	2.69	0.10	High Extent
20	documenting the instructional materials that are purchased over a period of time.	2.68	0.11	High Extent
21	in ascertaining the instructional materials that are best suited for a particular subject.	2.46	0.10	Low Extent
22	in organizing instructional materials in line with educational level of the students.	2.57	0.12	High Extent
Mean of Means		2.52	0.11	High Extent

Results in table 3 indicate principals' ratings of their implementation of EMIS in instructional materials management issues in secondary schools in Anambra State. Item 18 has mean rating of 2.51 with sd of 0.12; item 19 has mean rating of 2.69 with sd of 0.10; item 20 has mean rating of 2.68 with sd of 0.11 and item 22 has mean rating of 2.57 with sd of 0.12. All the mean ratings for items 18, 19, 20, and 22 respectively are above the cut-off mark of 2.50. The ratings indicated that the principals use EMIS in managing instructional materials and in documenting the instructional materials that are used over a period of time. The ratings also indicated that the principals use EMIS in organizing instructional materials in line with educational levels of the students.

On the other hand, item 17 has mean rating of 2.30 with sd of 0.11 and item 21 has mean rating of 2.46 with sd of 0.10. The mean ratings for items 17 and 21 are therefore below the cut-off mark of 2.50. They indicate that the principals do not use EMIS in planning the instructional materials for instructional delivery or in ascertaining the instructional materials that are best suited for a particular subject.

The standard deviation scores ranged between 0.10 and 0.12 with the overall Sd. of 0.11. The scores are close to one another and to the overall Sd. The range of the scores indicates that the



principals did not vary significantly in their ratings of the items. The mean of means for the cluster is 2.52 which is above the cut-off mark of 2.50. This means that the principals use EMIS in instructional material issues in secondary schools in Anambra State.

Research Question 4: What is the extent of principals' implementation of EMIS in planning curriculum issues in secondary schools in Anambra State?

Table 4: Mean Ratings on Principals Implementation of EMIS in Curriculum Issues in Secondary Schools in Anambra State. N=261

S/N	EMIS Implementation in Curriculum Issues. I use EMIS in:	Mean	Sd	Remarks
23	planning the content of curriculum.	2.11	0.11	Low Extent
24	analysing the content of curriculum.	2.46	0.10	Low Extent
25	organizing the content of curriculum in line with their learning experiences.	2.34	0.12	Low Extent
26	evaluating the extent to which content of curriculum has been achieved.	2.40	0.10	Low Extent
27	evaluating the instructional strategies.	2.17	0.11	Low Extent
28	planning the teaching methods in line with the curriculum content.	2.42	0.11	Low Extent
29	assessing the extent to which the objectives of the curriculum has been achieved.	2.39	0.12	Low Extent
30	the documentation of lesson presentation.	2.32	0.10	Low Extent
Mean of Means		2.33	0.11	Low Extent

Results in Table 4 indicate principals' ratings on their implementation of EMIS in curriculum and instructional management issues in secondary schools in Anambra State. Item 23 has the mean rating of 2.11 with sd of 0.11; item 24 has the mean rating of 2.46 with sd of 0.10; item 25 has the mean rating of 2.34 with sd of 0.12 while item 26 has the mean rating of 2.40 with 0.10. Similarly, item 27 has the mean rating of 2.17; item 28 has the mean rating of 2.42 with sd of 0.11; item 29 has the mean rating of 2.39 with sd of 0.12 while item 30 has the mean rating of 2.32 with sd of 0.10. All the mean ratings for items 23, 24, 25, 26, 27, 28, 29 and 30 respectively are below the



cut-off mark of 2.50. This means that the principals do not use EMIS in curriculum issues in secondary schools in Anambra State.

The scores of the standard deviation ranged between 0.10 and 0.12 with the overall Sd. mean of 0.11. The range of these scores indicates closeness of the principals' ratings. Similarly, the mean of means for the items is 2.33 which is below the cut-off mark of 2.50. This means that the principals do not use EMIS to a low extent in curriculum issues.

Testing of Null Hypotheses

H0₁: Principals of secondary schools in urban and rural areas in Anambra State do not differ significantly in their mean ratings on the extent they implemented the EMIS in planning staff personnel issues.

Table 5: t-test of Principals Implementation of EMIS in Staff Personnel Issues in Secondary Schools in Anambra State.

Group	Sample Size	$\bar{X}$	SD.	df.	t-Cal.	t-Crit.	Decision
Urban	106	3.16	0.10	259	1.98	± 1.9650	Significant (S)
Rural	155	2.85	0.11				

The result as shown in Table 5 revealed that, the t-test calculated is 1.98, while the t-test critical table value is ± 1.9650 . Thus, the t-calculated is greater than the critical observed table value which is ± 1.9650 and falls within the rejectable region. The null hypothesis (H_0) of no significant difference in the mean ratings is thus rejected indicating that there is significant difference in their mean ratings on the ways they have implemented the EMIS in staff personnel issues in secondary schools in Anambra State.

H0₂: Principals of secondary schools in urban and rural areas in Anambra State do not differ significantly in their mean ratings on the extent they implemented the EMIS in planning students' personnel issues.

**Table 6: t-test of Principals Implementation of EMIS in Student Personnel issues in Secondary Schools in Anambra State.**

Group	Sample Size	$\bar{X}$	SD.	df.	t-Cal.	t-Crit.	Decision
Urban	106	2.18	0.11	259	1.98	± 1.9650	Significant (S)
Rural	155	2.13	0.13				

The result as presented in Table 6 showed that, the t-test calculated is 1.98, while the t-test critical table value is ± 1.9650 . This value calculated is greater than the critical observed table value which is ± 1.9650 and falls within the rejectable region. The null hypothesis (H_0) of no significant difference in the mean ratings is thus rejected indicating that principals of secondary schools in urban and rural areas in Anambra State differed significantly in their mean ratings on the ways they have implemented the EMIS in students' personnel issues in secondary schools in Anambra State.

H0₃: Principals of secondary schools in urban and rural areas in Anambra State do not differ significantly in their mean ratings on the extent they implemented the EMIS in planning instructional material issues.

Table 7: t-test of Principals Implementation of EMIS in Instructional Material issues in Secondary Schools in Anambra State.

Group	Sample Size	$\bar{X}$	SD.	df.	t-Cal.	t-Crit.	Decision
Urban	106	1.83	0.11	259	1.97	± 1.9650	Not
Rural	155	1.75	0.10				Significant (NS)

In Table 7, the result showed that, t-test calculated is 1.97, while the t-test critical table value is ± 1.9650 . This value calculated is greater than the critical observed table value which is ± 1.9650 and falls within the rejectable region. The null hypothesis (H_0) of no significant difference in the mean ratings is thus rejected indicating that principals of secondary schools in urban and rural



areas in Anambra State differed significantly in their mean ratings on the ways they have implemented the EMIS in instructional materials issues in secondary schools in Anambra State.

H04: Principals of secondary schools in urban and rural areas in Anambra State do not differ significantly in their mean ratings on the extent they implemented the EMIS in planning curriculum issues.

Table 8: t-test of Principals Implementation of EMIS in Curriculum Issues in Secondary Schools in Anambra State

Group	Sample Size	$\bar{X}$	SD.	Df.	t-Cal.	t-Crit.	Decision
Urban	106	2.18	0.12	259	1.98	± 1.9650	Significant (S)
Rural	155	2.21	0.10				

In Table 8, the result showed that, t-test calculated is 1.98 while the t-test critical table value is ± 1.9650 . This value calculated is greater than the critical observed table value which is ± 1.9650 and falls within the rejectable region. The null hypothesis (H_0) of no significant difference in the mean ratings is thus rejected indicating that, principals of secondary schools in urban and rural areas in Anambra State differed significantly in their mean ratings on the ways they have implemented the EMIS in curriculum issues in secondary schools in Anambra State.

Summary of Findings

Based on the data presentation and analysis, the following summaries of findings are made:

1. Principals of secondary schools in Anambra State implement EMIS to a low extent in planning staff personnel issues in their schools.
2. Principals of secondary schools in Anambra state implement EMIS to a low extent in planning students' personnel issues in their schools
3. Principals implement EMIS to a high extent in planning instructional material issues in secondary schools in Anambra State.
4. Secondary school principals in Anambra state implement EMIS to a low extent in planning curriculum issues in their schools
5. There is significant difference in the mean ratings of principals in urban and rural areas on the extent they have implemented EMIS in planning staff personnel issues on their schools.



6. There is significant difference in the mean ratings of principals in urban and rural areas on the extent they have implemented EMIS in planning students' personnel issues on their schools.
7. There is no significant difference in the mean ratings of principals in urban and rural areas on the extent they have implemented EMIS in planning instructional materials issues on their schools.
8. There is no significant difference in the mean ratings of principals in urban and rural areas on the extent they have implemented EMIS in planning curriculum issues on their schools.

DISCUSSION OF RESULTS, CONCLUSION AND RECOMMENDATIONS

The findings of this study were discussion and conclusion made. The implication of the findings and recommendations were made along with elicitations and suggestion for further studies.

Discussion of Findings

The findings of the study were discussed under the following subheadings:

1. Implementation of EMIS in Staff Personnel Issues
2. Implementation of EMIS in Students' Personnel Issues
3. Implementation of EMIS in Instructional Material Issues
4. Implementation of EMIS in Curriculum Issues

Implementation of EMIS in Staff Personnel Issues

The first finding of this study was that principals of secondary schools in Anambra state do not implement EMIS in staff personnel issues. Further finding indicated that secondary school principals in urban and rural differed significantly in their mean ratings on the ways they have implemented EMIS in staff personnel issues.

EMIS is a good innovation in the Nigerian education system. The fact that the principals do not implement it in staff personnel issues in their school points to the fact that most of the principals may not have really understood what EMIS is all about even though it has lasted over eleven years. In the same manner, they differed significantly in their mean vetting probably because all of them do not pass through the same experience, given the location of their schools.

The findings of this study are supported by Joseph (2018) who found that principals did not implement EMIS to any extent in the management of staff in their schools. The finding of this study differed from Luenan (2012) who found that location of school did not significantly affect principals' implementation of EMIS in their school. The reason for the difference in the finding



could be attributed to the level of development in the countries the studies were conducted. Luenan studied Europe but the current study was in Nigeria which is still a developing country.

Given the requirements for the establishment of EMIS, one could have thought that principals in urban and rural areas could not have differed in their mean ratings but the finding was on the country. The difference in the mean ratings could be attributed to or electricity problems and security challenges facing EMIS equipment in some villages.

Implementation of EMIS in Students' Personnel Issues

This study also found that principals in secondary school in Anambra state do not implement EMIS in students' personnel issues. Further findings of the study inculcated that, principals of school in urban and rural areas differed significantly in their mean rating on ways they implement EMIS in students' personnel issues in their schools.

Like the pervious discussion, one is not surprised at the finding of this study because the knowledge of EMIS is seems to be too low among school administration in Nigeria and Anambra state in particular. A policy introduced in 2007 ought to have been mastered by the people by now but in the Nigerian experience, the people that introduce the policy are sometime far from the implementers. The principals may not have implemented EMIS in the student personnel issues probably because they may not be aware of the policy, the date of introduction notwithstanding.

Given the requirement and operations of EMIS one expected a significant difference in the mean ratings of principals in urban and rural secondary schools. They differed probably because they have low knowledge of EMIS which probably contributed to its non-implementation in managing students' personnel issues in the secondary school. Again, EMIS need electricity to function but this is lacking in some rural areas in the state.

The finding of this study is supported by kamile (2018) who found that principals did not utilize EMIS principals in managing student issues in their school. Similarly, koofi (2018) also found that male and female principals did not differ significantly in their mean rating on the implementation of EMIS. The current study focused on location as moderator variable, the no significant difference in koofi's study attributed to gender which is not important to the current work.

Implementation of EMIS in Instructional Material Issues

This study found that secondary school principals in Anambra state implement EMIS in instructional material issues. The findings from the hypothesis indicated that the principals in urban and rural areas in the state differed significantly in their mean ratings on the ways they implement EMIS in instructional material issues.

It is encouraging to find that principals of secondary school in Anambra state implement EMIS in planning instructional materials. One significant aspect of EMIS is record- keeping and data



transmission. It shows that the principals keep records of instructional materials in their schools and use the records in handling such materials. It also shows that they transmit the information or data relating to the instructional material to appropriate quarters. Their knowledge of EMIS and implementation practices are evident in the data analysis for the third hypothesis that indicated significant difference in their mean ratings. On extent they implement EMIS in handling of instructional material issues in their schools. This shows that, though they implement EMIS in handling instructional material issues, the operation in urban and rural areas are not the same.

The finding of this study was supported by Ahaeto (2018) who found that principals utilized EMIS in handling instructional materials in their schools. Again, Telem and Buvitski (2017) also found that school location has significant impact on principals' implementation of EMIS. This probably accounted for the insignificant differences in the mean ratings of principals in urban and rural areas on ways they implement EMIS in planning materials issues in their schools.

Implementation of EMIS in Curriculum and Instructional Issues

This study found that secondary school principals in Anmbra State do not implement EMIS in curriculum issues in their schools. Data analysis for the fourth hypothesis revealed that secondary school principals in the urban and rural areas in Anambra State differed significantly in their mean ratings on ways they implement EMIS in curriculum issues in their schools.

The finding of the study is quite educative. It shows that most of the principals in the state may not have gotten adequate knowledge of EMIS and its operations. This could be the reason why they did not implement it in the curriculum issues. The same view seemed to be expressed in the hypothesis that indicated significant difference in the mean ratings of the principals in urban and rural areas on ways they implement EMIS in curriculum issues.

The finding of this study is supported by Mugerezi (2019) who found that EMIS is not well implemented in the areas of curriculum implementation. Again, Trucano (2016) found significant difference in the mean ratings of urban and rural school principals in the implementation of EMIS in managing instructions.

Conclusion

The conclusion of this study is that principals in public secondary schools in Anambra State implement EMIS in instructional material issues. They do not implement EMIS in planning staff personnel, students' personnel and curriculum issues. Furthermore, they differed in their mean ratings on the ways they implement EMIS in the issues assessed.

Implications of the Study

The findings of this study have implications for school principals. The findings also have implications for ministry of Education and policy makers.



The first implication of this study is for the principals. They need to understand the components and operations of EMIS. The fact that the principals do not implement EMIS in their schools to a high extent implies that they do not have functional EMIS in their schools. They cannot implement what they do not have. Even if they have EMIS in their schools, they must have the knowledge of the principals and skills needed to make it functional.

The second implication is for educational planners. The principals that supply data for educational planning do not operate functional EMIS in their schools. This implies that the educational planners may not plan based on reliable data. This will make their planning activities difficult especially at this information driven age where information is more of digital than manual. The educational planners need to encourage school principals to embrace EMIS so that they can come up with functional plans guided by EMIS.

The third implication of the findings is for the ministry of education. The ministry needs to equip the schools with EMIS facilities. The ministry also needs to equip school principals with the knowledge and skills needed to operate functional EMIS. This could be done through capacity building workshops or seminars. This will go a long way in the implementation of EMIS in the schools.

The last implication of the study is for education policy makers. Policies are made to be implemental and proper implementation requires that implement be properly informed. The education policy maker whether at federal or state level need to have a common understanding with principals who in the case of EMIS are the major stake holding in terms of implementation. Handing down policies to people (who may not have knowledge of the policy) to implement may result in the non-implementation of the policy. There need to be a kind of collaboration between the policy makers that introduced EMIS and school principals who will implement the EMIS in their schools.

Recommendations

Based on the results of the study and discussion that followed, the following recommendations are made:

1. Principals should undergo in-service training in the implementation of EMIS in planning staff personnel issues, students' personnel issues, instructional materials and curriculum issues in their schools.
2. The Ministry of Education that introduced EMIS into the Nigerian educational system should properly educate principals through seminars or workshops on the implementation of the policy in secondary schools



3. Principals should implement EMIS in planning staff personnel issues in their schools.
4. The principals should try to implement EMIS to a high extent in planning student's personnel issues.
5. Principals should implement EMIS to a high extent in planning curriculum and instruction in their schools.
6. The state ministry of Education should empower principal through seminars or other forms of in-service training to effectively implement EMIS in their schools.

Limitations of the Study

There were some limitations during the execution of the study but they do not in any way invalidate the findings of the study.

1. The findings of this study cannot be applied in the general administration or management of the school. Though the study examined staff personnel management, students' personnel issues, instructional material and curriculum, the aspects covered are issues related to EMIS implementation. School management or administration was not studied.
2. The findings of the study may not be over generalized to schools outside Anambra state. This is because the provision of facilities and capacity building for the implementation of EMIS may differ from state to state. Accordingly, the problems and prospects of EMIS across the states of the federation may not be entirely the same.

Suggestions for further studies

The following suggestions were made for further research.

1. A replication of the present study in another level of education and in another state of the federation to enable and in another state of the federation to enable accurate generalization of the findings.
2. Availability of facilities for the implementation of EMIS in public and private secondary schools in Anambra State
3. A comparative analysis of EMIS in public and private secondary schools in Anambra state
4. In-service training needs of principals for the implementation of EMIS in secondary schools in Anambra state
5. Evaluation of the implementation of EMIS principles in secondary schools in any state of the federation or geographical zone.



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APPENDICES

Appendix 1

Department of Educational Foundations

Faculty of Education

Chukwuemeka Odumegwu Ojukwu University

Anambra State.

Dear Respondents,

LETTER OF INTRODUCTION

The researcher is carrying out a research work on Implementation of Education Management Information Systems (EMIS) in secondary schools in Anambra State.

The research is strictly for academic purpose and the confidentiality of your information is assured. Kindly assist me in getting the required information she would need for a successful completion of the study.

Thanks, in anticipation for your favourable consideration.

Yours faithfully,

Researcher



Appendix 2

PRINCIPALS' IMPLEMENTATION OF EDUCATION MANAGEMENT INFORMATION SYSTEMS QUESTIONNAIRE (PIEMISQ)

Part A: Background Information

Please supply the following information and tick good (✓) in the column as it applicable to your school location.

Location of School (a) Urban ☐ (b) Rural ☐

Part B: Questionnaire items.

Instruction: The items below are on principals' implementation of EMIS in secondary schools in Anambra State. As a school principal, you are required to tick (✓) the right option that expresses your implementation of EMIS in your school. Use the following codes: Very High Extent – 4 points, High Extent – 3 points, Low Extent – 2 points and Very Low Extent – 1 point.

	Section B: Staff Personnel Management Issues	Response Options			
S/N	EMIS Implementation in Staff Personnel Issues. I use EMIS	VHE	HE	LE	VLE
1	in ascertaining the number of academic staff in my school.				
2.	in ascertaining the number of non-academic staff in my school.				
3.	in planning the salary of the staff.				
4.	in identifying absentee members of staff.				
5.	in ascertaining and confirming the length of service of every member of staff.				
6.	in identifying regular attendee members of staff for the purpose of re-enforcement.				
7.	for a daily record of the classroom activities of academic staff.				
8.	for a daily documentation of activities of non-academic staff.				



Section B: Students' Personnel Management Issues		Response Options			
S/N	EMIS Implementation in Student Personnel Issues. I use EMIS	VHE	HE	LE	VLE
9.	in ascertaining the number of students in my school.				
10.	in ascertaining the number of WAEC candidates in my school.				
11.	in collecting the academic records of students in my school.				
12.	in analysing the academic performance of students on a termly basis in my school.				
13.	in planning the number of students to admit at the beginning of a new academic session.				
14.	in identifying absentee students in my school.				
15.	for the dissemination of termly results of students.				
16.	for keeping records of behavioural disposition of students for appropriate decisions in my school.				
Section C: Instructional Material Issues		Response Options			
S/N	EMIS Implementation in Instructional Material Issues. I use EMIS	VHE	HE	LE	VLE
17.	in planning the instructional materials for instructional delivery.				
18.	in managing instructional materials in my school.				
19.	in documenting the instructional materials that are used over a period of time.				
20.	documenting the instructional materials that are purchased over a period of time.				
21.	in ascertaining the instructional materials that are best suited for a particular subject.				
22.	in organizing instructional materials in line with educational level of the students.				



Section D: Curriculum Management Issues		Response Options			
S/N	EMIS Implementation in Curriculum Issues. I use EMIS in:	VHE	HE	LE	VLE
23.	planning the content of curriculum.				
24.	analysing the content of curriculum.				
25.	organizing the content of curriculum in line with their learning experiences.				
26.	evaluating the extent to which content of curriculum has been achieved.				
27.	evaluating the instructional strategies.				
28.	planning the teaching methods in line with the curriculum content.				
29.	assessing the extent to which the objectives of the curriculum has been achieved.				
30.	the documentation of lesson presentation.				

Appendix 3:

Instrument Reliability

Scale: Reliability coefficient for Section A

Case Processing Summary

		N	%
Cases	Valid	25	100.0
	Excluded ^a	0	.0
	Total	25	100.0

a. List wise deletion based on all variables in the procedure.

**Reliability Statistics**

Cronbach's Alpha	N of Items
.7231	8

RELIABILITY /VARIABLES=c1 c2 c3 /SCALE

('Reliability coefficient for Section C') ALL

/MODEL=ALPHA.

Reliability

Scale: Reliability coefficient for Section B

Case Processing Summary

	N	%
Valid	25	100.0
Excluded ^a	0	.0
Total	25	100.0

a. List wise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	N of Items
0.7433	8

RELIABILITY /VARIABLES=d1 d2 d3 d4 d5 d6 d7 d8 d9 d10 d11

/SCALE('Reliability coefficient for Section D') ALL /MODEL=ALPHA.



Reliability

Scale: Reliability coefficient for Section C

Case Processing Summary

		N	%
Cases	Valid	25	100.0
	Excluded ^a	0	.0
	Total	25	100.0

a. List wise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	N of Items
.75421	6

RELIABILITY /VARIABLES=e1 e2 e3 e4 e5 e6 e7

/SCALE('Reliability coefficient for Section E') ALL /MODEL=ALPHA.

Reliability

RELIABILITY /VARIABLES=f1 f2 f3 f4 f5 f6

/SCALE('Reliability coefficient for Section F') ALL /MODEL=ALPHA.

Reliability

Scale: Reliability coefficient for Section D



Case Processing Summary

		N	%
Cases	Valid	25	100.0
	Excluded ^a	0	.0
	Total	25	100.0

a. List wise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	N of Items
.741322	8

RELIABILITY /VARIABLES=g1 g2 g3 g4 g5 g6 g7

/SCALE('Reliability coefficient for Section G') ALL /MODEL=ALPHA.