

**INTEGRATED DATABASE DESIGN FOR  
GOVERNMENT SECONDARY SCHOOL SHIRORO.**

*BY*

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## DEDICATION

To my loving parents Mr. Mrs. John Onuorah, in appreciation of their immense contributions to my success in life.

## DECLARATION

I declare that this project has been written by me through research works and I remain solely responsible for all the intellectual position taken in this inquiry. If there is any short coming, I will make myself available for the defence.



## APPROVAL PAGE

This project has been read and proved by:

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## ACKNOWLEDGEMENT

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Above all I thank God for his special love that made me to realize this dream and I pray for me better in my life.

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This project is aimed at designing assisted information system that will aid the Government Secondary School Shiroro, especially their administrative unit in keeping accuracy and complete records of there staff, and students. The new system will also be used to retrieve information on the student and entire school, which could be displayed on the Computer Screen or printed if so desired. The project hopes to achieve an easy, fast and neat personnel information management system.



# CHAPTER ONE

## 1.1 INTRODUCTION

### BACKGROUND OF THE STUDY

Database definition: It is more or less than an electronic file, usually on disks or tapes, which contains all the information we would ordinarily expect to find in the old fashioned file cabinets of an enterprise. It is, in short, the organised memory of the business. In such an electronic file we expect to find what we have done in the past, just exactly what we are currently doing, and what we have agreed to do in the future.

Data stored on auxiliary storage can be read into the main storage of the processor unit for processing. Within the computer, there are variety of job duties that must be performed. For the storing of magnetic disk and magnetic tape, tape and disk libraries exist. These libraries often contain many hundreds and even thousands of reels of tape and/or disks. To keep track of these forms of auxiliary storage, a tape librarian is employed.

To prepare data for processing, that is to record data from original source documents to punched cards or floppy disks, data entry operators are required. These data entry operators commonly work in a data entry department within the computer.

Academics is said to be the art of getting things done through and with people. It involves the co-ordination of material and human resources to achieve the schools goals and objectives. It involves the creation of an environment



where people can perform and co-operate with one another towards the attainment of the groups goals. Thus introduction of computer in Government Secondary School Shiroro try to remove barriers that hinder the performance of the workers and students so as to optimize efficiency.

Human relation practitioners believe that management centres around personal relationship, leadership and general human behaviours, the human factor is a very vital component in Academics.

Academics cannot exist without individuals; the latter are investments that could yield different results depending on how they are organised, and the manner in which their abilities are used. The school management of Human resources is therefore a major function of personnel management and it involves:

- a) Providing adequate personal services for the school such as recruitment of staff/teachers, job placement, appraisals, employee relations, training of students and their welfare services etc.
- b) Formulating, proposing and gaining acceptance for the students policies and strategies of the school.
- c) Advising and guiding the school on the implementation of school policies and strategies.

The methods and procedures in which similar personal/academics functions are performed tend to vary from one school to another. In some schools, academics, are performed manually or orally and there may be no



formally designated information system, whereas in other schools, the same functions require extensive use of data processing and communication equipment to make up what may be called information system. Computer has become an essential part of these school information processing because of the power of the technology and the volume of data it can process. There seems to be no limit to the work that computer can do. It is integral part of today's society and literacy in computer is now as important as learning itself.

The cost of hardware and software for information processing, storage and retrieval is creasing at a very fast rate. It has been accepted world wide that the vast portion of the school's data needs will be stored more economically on computer files and data banks than paper. Electronic computing technology has already made the mark, and a well-designed computerised management information system, therefore will provide the various levels of school managements particularly students of the school.

## **1.2 STATEMENT OF THE PROBLEM**

The usual personnel management of the school functions involve around provision of personnel services such as student intake/admission, students examination/results records and staff/teachers welfare. These tasks are extremely complex, logical and practical, and require large volume of record keeping, processing and retrieval in order to ensure efficiency and effectiveness.

Unfortunately, these records are kept and maintained manually by the school personnel management. Some of the records kept on files get lost,



mistakenly form or even misplaced, and then difficult to trace and sometimes  
mistakenly form or even misplaced, and then difficult to trace and sometimes  
incomplete. This has resulted in the admission records and examination results  
records kept by the unit not always being available when needed, and when  
available are not completed and assessable.

### **1.3 SIGNIFICANCE OF STUDY**

Computer has become an essential part of academics information processing because of the power of the technology and the volume of data it could process. The design and implementation of computerized admission records/exam, Results records information for Government Secondary School Shiroro. Therefore will

- (1) Improve on the overall inefficiency of the existing manual information system in use by the school.
- (2) Create a Database Management System for quicker storing, processing, retrieving, updating, editing and generating reports about the school work.
- (3) Facilitate speedy processing of admission/exam results records and preparation of reports.
- (4) Ensure adequate and accurate entry and retrieval of students data.
- (5) Enhance the availability and accessibility of staff, teachers and students records.
- (6) Reduce data redundancy and boost the integrity of student records.



## 1.4 SCOPE OF STUDY

Government Secondary School Shiroro is made up of three major modules namely, admission module, examination records / results records module etc.

But time and resources constraints have necessitated the concentration of the research work on the computerisation of the admission module and examination results module only.

## CHAPTER TWO

### 2.1 LITERATURE REVIEW

#### WHAT IS COMPUTER (A CONCEPTUAL VIEW).

In developing an effective computerised information system for Government Secondary School Shiroro, it is necessary to also have a conceptual opinion or view of what a computer is.

The term "computer" could literally be used to identify any device that calculates. Initially, the computer was designed as a tool to manipulate numbers, and solve arithmetic problems, this original use is understandable, since most of the early designers and users were mathematicians, scientists and engineers.

However, people began to realize that the computer could process symbols as well as numbers. Therefore, the literal interpretation of the word "computer" makes the word something of a misnomer, since the computer does more than just carry out addition, subtraction, multiplication and division. Indeed, the computer can read input data, transfer or move data, store and retrieve data by logical operations, and generate output results. In view of the fact that its functions are broader than just computing, the computer is sometimes more descriptively called an "electronic data processing" (EDP) or an "automatic data processing" (ADP).

Tomeski E.A. (1979) presented us with a detailed definition of computer. In a narrow sense, he sees computer as "that piece of hardware that performs the data processing" (thus limiting it to the data processing unit). In a broader view,



he defines it as "that which includes all equipment components that are interconnected to perform data processing. The equipment includes not only the C.P.U., but also other peripheral devices that handle the input and storage of data and the output results." In more comprehensive view, he defines computer as "a system that includes the hardware, the software, and the people who are integral to a computers effective operation".

A total /computer system consists of these elements/components - hardware, software and lifeware. The components are inter-dependent, and the malfunctioning of anyone can cause the entire/total computer system to fail.

There are different types of computers, and they are classified according to how the computer represents number (analog, digital and hybrid computer), the computers' degree of specialisation (Special purpose and general purpose computers), sizes (Micro, Mini Mainframe, Super Computers) and the type of applications that the computer handles best (Scientific and business data processing applications).

## **2.1 ADVANTAGES OF COMPUTERS**

A midst its limitations, computer offers the following advantages;

- (i) Speed: The most obvious advantage of using a computer is speed. The computer can perform calculations and data processing more quickly than alternative methods can. Work that might take humans months or even years to complete manually may be accomplished in hours, or at most days by computer.



(ii) Accuracy: If the computer is properly programmed and provided with accurate data, it will do the intended work with a very high degree of accuracy. In addition, the computer does not get bored or fatigued, thus avoiding the errors human beings might make under the same circumstances.

(iii) Reliability: The computer can work almost twenty four hours a day (with a little time out for equipment check-out and maintenance) everyday of the year, and still operate reliably. Modern electronic computers perform at high levels of reliability, and equipment failures are very few.

(iv) Retention: The computer can store and search massive files of data and programs. The content of the data files does not fade or get lost, and it can be used constantly.

(v) Economy: The advantages of speed and accuracy can often be translated into naira savings realized. For instance, accurate record can reduce the frequency of bad decisions that were made because of unreliable or available information.

(vi) Wide Applicability: A computer can be used to solve a wide variety of problems that arise in science and business. The boundaries of what the computer can accomplish are limited only by the ability and imagination of its users.



In summary, this projects will endeavour to explore these advantages of the computer by designing and developing a computer based for integrated database design for Government Secondary School Shiroro.

### **2.3 ORGANISATIONAL STRUCTURE OF GOVERNMENT SECONDARY SCHOOL SHIRORO.**

It is an axiom that the structure of an organisation or institution determines the functions (duties and responsibilities) of the people in the organisation.

In this study we shall examine the concept of structure with a view of showing how it relates to the different executive functions and roles that will be examines in subsequent chapters. The concept of structure is partially implied in the concept of organisation. But, generally, structure connotes the framework within which people act.

It is the internal differentiation and patterning of relationship (Thompson 1977). In practice, structure is concerned with the patter of network of relationships between the various individuals positions and roles in the enterprise. Harold Stieglitz (1971) regards the structure of an organisation as ... the process of logical grouping activities, delineating authority and responsibility and establishing work relationships that will enable both the organisation and the individuals to realize their mutual objectives. Criteria for good organisation and structure. The structure of any organisation (such as education) is like the architectural plan of a building, (Newman 1972).

The more clearly set out, balanced, and utilitarian the plan, the stronger and more serviceable the building. For the organisation and structure of the education enterprise to be deemed appropriate, consideration should be given to the following criteria.

- (a) The objectives of education and the types of activities required to achieve them.
- (b) The benefits of specialization and how to maximise such benefits for the interest of the enterprise.
- (c) The limitations of functional authority and how best to distribute and harmonize the authority levels.
- (d) The problem of communication and to ensure effective communication between levels and functions.
- (e) The size, shape, location, and capacity of the enterprise and what organisation structure best fits such.

Therefore, the organisation and structure of an enterprise affects the management of the system. However, a good structure alone is not a panacea for all the organisation's problems. As Drucker (1955) argued.

Good structure does not by itself produce good performance just as a good constitution does not guarantee great presidents, or good laws, or moral society. But, a poor structure makes good performance impossible no matter how good the individual manager/admission may be. To improve organisation structure with therefore always improve performance.



## DEPARTMENTATION (OR DEPARTMENTALIZATION)

Departmentation implies the creation of departments in an organisation.

The term department is used to indicate a particular level in the organisation at which specific activities are carried out.

Departmentation involves the division of activities and functions into groups for effective operation, the establishments of relationships between the individuals performing different functions in the given unit, the reaction of conditions which would knit the group into a working unit, and the creation of separate departments is possible where;

- (a) There is such similarity in the personal experiences, qualification, and purpose that would necessitate the grouping of similar activities together. For example in the ministry of education each of the departments or units for planning, accounts, inspection etc. have persons who share similar experiences, qualifications and purposes.
- (b) A particular member or executive is particularly interested in a special function in which he has a high degree of competence which requires a separate grouping.
- (c) These are activities which require identical and collective action rather than individual assignment.
- (d) Here is need for close co-ordination between related functions whose separation would create management problems.



- (e) There is need to avoid friction and unhealthy competition between functions or activities.

The major objectives departmentation, therefore are to make full use of specialisation, to facilitate control and co-ordination to secure proper recognition or attention for a particular activity, to accommodate local conditions and demands, and to reduce unnecessary expenses arising from fragmentation or individualization or identical functions.

Departmentation may be based on the following.

- (a) Function - that is by assigning all activities and works of the same kind under one head.
- (b) Product - in which case all activities required to produce a particular result (output) are grouped together.
- (c) Geographical location - all activities performed in specific areas or sites are located at the different locations.
- (d) Consumer (or client) - certain departments may be created where it will be convenient for the clients, consumers or customer. For example, a special education department may be created in a school to cater for the handicapped students in the institution.

### **Centralization and Decentralization**

It refers both to the physical location of organizational facilities and to the extent to which decision making, authority and responsibility in the organisation are concentrated or dispersed throughout the organisation. In centralization, the



facilities, decisions and authority and concentrated at one point or level (the top level) or the organisation. Decentralisation on the other hand implies the location of facilities, decisions and authority at different points or levels or locations of the organisation. Practically the two terms are relatives. No deal organisation can be completely either centralized or decentralized. However, in modern management of education there is increasing tendency to decentralize facilities, authority and decision making, hence in a country like Nigeria, there are various decisions and authority at the federal, state, local and individual schools levels. The conditions necessitating decentralization in educational management include:

- 1) When the facts needed for making decisions can be more readily and accurately obtained at different local points.
- 2) The presence at different locations or levels of those who know the facts and can use them readily;
- 3) Many people have the capacity and ability to make useful decisions concerning education.
- 4) There may be need for speedy on-the-spot decisions regarding specialized aspects of education to meet local demands.
- 5) Where the ease of co-ordinating activities at different locations and levels is possible.

## **Duties and Responsibilities**

Following the structure of the institution the following is an attempt, though not necessarily comprehensive, to list the duties and responsibilities of teachers, department heads and administrative officers of standard educational institutions. Other responsibilities are implicit, such as loyalty to the profession and to the institution appropriate referrals of individuals who may need help the intercommunication of ideas and information, and professional growth.

Departmental heads and administrations, in addition to the assignments stated for each, are all expected to assume responsibility for keeping the principal informed on major problems and developments, and for annual reports to him. In addition, special assignments may be made by the principal, and all, professional or non professional personnel are expected to share in controlling student conduct and emergency situations in the institution as these arise.

The listed responsibilities of the teachers are compatible with normal classroom assignments and must be met if the professional duties of the teacher are to be regarded as fulfilled.

### **The School Executives**

Institutional executive implies those officers who are at the centre of the entire administration. The school executive would include in order of authority.

1. The Principal
2. The Vice Principal 1 and 2



3. The Faculty Council(or staff Council) which includes the Deans and Heads of Sections.

The concept of executive here does not imply that the other key officers in the school administration such as section directors, chiefs, and co-ordinators are not performing executive functions. It only implies that these are the major officers who directly support the principal in the planning, policy and execution in the school. Although responsibilities are delegated to them by the school principal (The Chief Executive), most of the responsibilities are; very formal and specific to their positions. Furthermore, changes in the functions of such key officers in the institution are usually made by the chief executive after consultation with the Ministry of Education or the School Board, while changes in the functions of the other officers could be made at anytime without much reference to the Ministry of Education. Furthermore, the School Executive are involved with direct school administration (in addition, in most cases to their academics duties).

#### **The Administrative Staff:**

#### **The School Principal**

The school principal is the chief executive of the school. Indeed, the responsibility of the entire school administration lies on his head. He is answerable for what goes on in the whole school. Therefore, every duty or responsibility post in the school can be seen in some respects as a support to the principalship. However, the principal is neither omnipotent, omniscience nor

omnipresent. Hence the need for delegation of duties and responsibilities. Without sharing out administrative duties, the principal would find it difficult to administer effectively. Most school principals find themselves in great difficulties because they allow every person and every duty access to their office.

In terms of specific duties and responsibilities, the principal:

- Serves as the Chief Executive officer of the school.
- Organizes the school work, defines their jobs, identifies talents and delegates power and authority.
- Provides general leadership for the school, the teachers and the student body.
- Recommendations to the Board of Governors, the Central Schools Board or the Ministry of Education.
- Directs the preparation of the annual budget of the school, and recommends to the appropriate body the budget necessary to achieve a desirable quality of educational programmes.
- Recommends to the Ministry of Education the building necessary for the proper housing of students, staff offices and equipments.

#### **Vice Principals**

- Assists the principal in the organisation and administration of the school.
- Administers the operation of the programme of the school and, in the absence of the principal, has overall responsibility for the same.



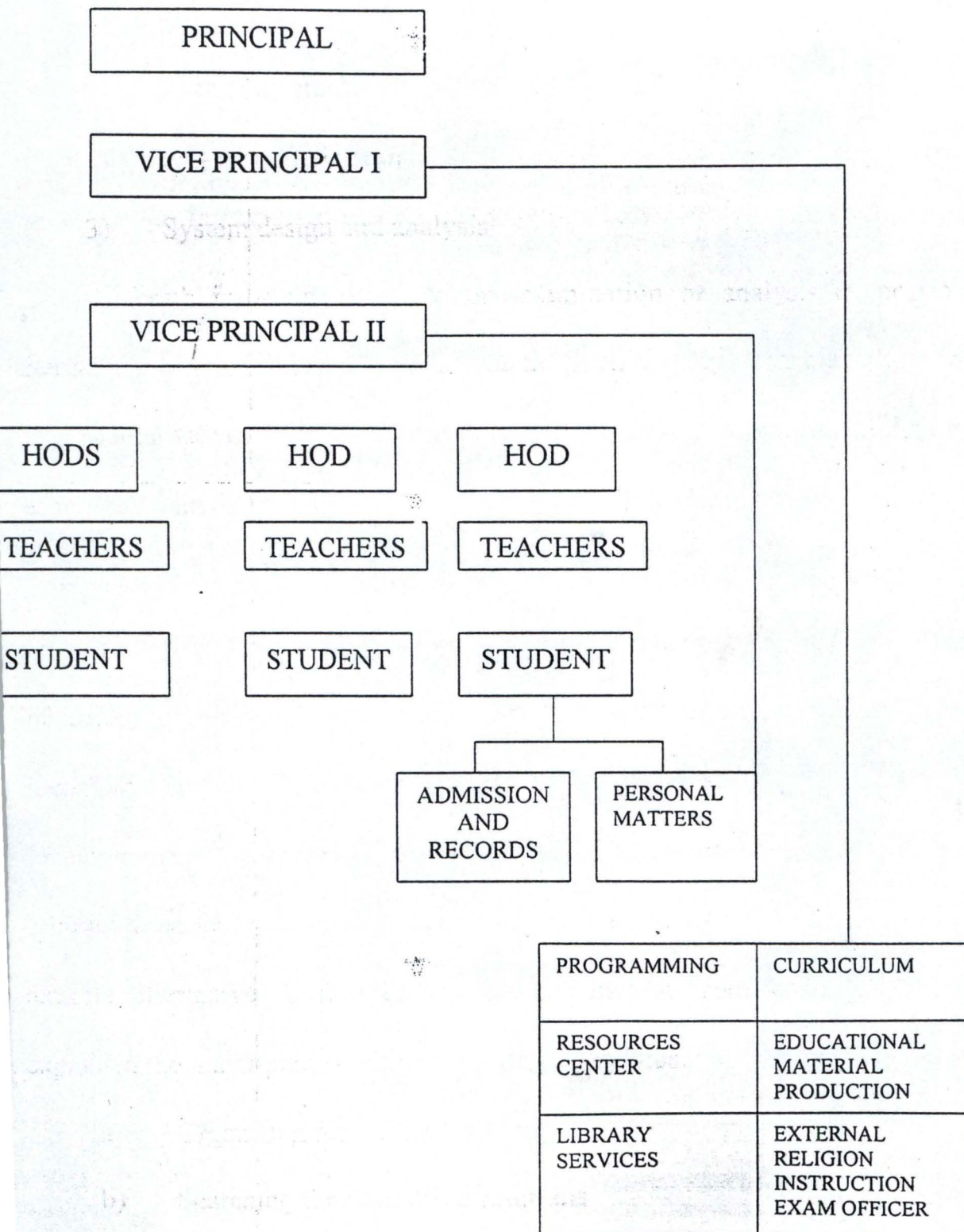
## Vice Principal 2

- Coordinates the work of the housemaster and the Bursar (Financial Officer).
- Supervises the coordination, preparation and administration of the school budget.
- Provides leadership in the development of the school building programme and participates in the planning of the total plant maintenance.
- Controls emergency situations in the school and exercises authority on disciplinary cases.
- Signs all cheques of the students activities as the representation of the principal.
- Cooperates in the public relations programme, particularly by coordinating the welcoming and hosting of distinguished visitors who come to the school.

This executive arm, often referred to as the School Executive Council, includes, the principal, the vice principals (Vp1, Vp2) and the heads of departments and the of sections. The major role of the council is to facilitate the administrator of the school and to provide the chief executive with the necessary. Support, suggestions, and services for effective and efficient achievements of the school goals.

# AN ORGSNISATIONAL STRUCTURE OF GOVERNMENT

## SECONDARY SCHOOL SHIRORO





## CHAPTER THREE

### 3.0 SYSTEMS ANALYSIS AND DESIGN

#### 3.1 INTRODUCTION

- 1) Feasibility study
- 2) Pre-computerization
- 3) System design and analysis

A feasibility study refers to an examination or analysis of possible alternatives to the development of a system. Such a study determines how the various alternatives are constructed by such factors as resource availability, technology, existing administrative structure. In simple economies feasibility is related to cost benefit / cost effectiveness analysis of a system or programme. In a feasibility study, each solution to the problem considered feasible (i.e. within identified constraints), is compared to the expected benefits. If Government Secondary School Shiroro cannot afford the required resources then the development of the system is suspended. But if on the other hand the value or benefits to be derived appear greater than the costs at all costs, then one of the feasible alternative is selected for implementation. Henstchke (1975) has explained the major phases of the feasibility study thus:

- a) Organising for the study
- b) Searching for alternative solutions
- c) Analysis the relatives merits of feasible alternatives.
- d) Selecting an alternative.

The simple guideline in a feasibility consideration is that the expected value or benefit must exceed, or equal the expected costs in order for a project to be economically feasible. However, some social or political exigencies may occasion the adoption or undertaking of a project even when it is economically not feasible.

However, stages in the modernization of Government Secondary School Shiroro has to follow the process of modernizing educational systems information management which might require three main stages namely: -

- Diagnosis of the information system stage.
- Pre-computerization of management stage; and
- Computerization stage.

Basically the diagnosis stage is important for determining the clarity of the system's objectives as well as the quality of management procedures since the future approach will not necessarily take up current management practices and computerize them. Each administrative process has to be broken down into sub-components so that where necessary the current practices can be critically analysed or assessed.

### **3.2 PRE-COMPUTERIZATION**

In Government Secondary School Shiroro, the pre-computerization stage focuses on the introduction of rational organization of work such that reflects the goals of the management units concerned. This stage will involve the planning, administration, organization, control of information functional



subsystems in each units of operation, and if desirable, will introduce changes in their structures and procedure ok work. This stage of management modernization will not necessarily depend on the initiative of the users or teachers who are already accustomed with the day-to-day activities in work place and the problems they have been facing. The pre-computerization stage is rather a stage of careful and deliberate planing and determination of the specific information requirements of the school to ensure simplification and proper organization of teaching work.

The computerized stage may be regarded as the final stage of the school development; and indeed the height of the school modernization process, essentially is stage has two sub-stages namely.

- a) The centralized computerization stage at which stage a central processing unit (CPU) is developed for handling all information processing in the school and.
- b) The decentralized computerization stage at which stage all the constraints associated with the installation, use and maintenance of technological facilities will be considered with a view to harmonizing the structures, facilities and programmes of the educational system and its capacity to cope with the demands of the level of technology. In a society where computer literacy is zero, it would not be advisable to embark on fullscale decentralized computerization without first experimenting with centralized computerization.

Having determined the overall specifications from the above point of view of Secondary School Shiroro, it now becomes necessary to streamline the details of the design for the development and establishment of the system. Both the specifications of the systems requirements and the design of the system are in a continuum, but the major difference between operations is that in the systems requirements specification, it was the responsibility of the user. The to make sure the needs of the school were specified. The major responsibility lies with the information systems analyst. However, a teacher from that school must not be ignorant of what is required of the systems designer or analyst.

The design of the school requires the following activities;

- Determining the procedures and operations for the handling of information of the school.
- Determining the hardware (machine),
- Designed the input and output forms
- Determining the systems programming need (i.e. the instructions for data handling manually or for the computer).
- Deciding on the systems personnel needs (e.g. programmes, analyst, key punch, operators, machine operators etc.) and the procedures for testing other competency.

### **3.3 SYSTEMS DESIGN PRINCIPLES AND REQUIREMENTS**

The following principles would be of a great help for the computerization of the Government Secondary School Shiroro.



- a) **Installation Schedule:** There should be target dates for each design component so that each component would be ready when it is needed and, furthermore, each design component may be dependent on the previous component. For example, if the feed-in of information will require the use of punch cards, it would be necessary to schedule the punch card component for specific dates so that the "feed-in" could proceed.
- b) **Flexibility:** Each stage of the systems design should be flexible enough to allow for alternative information formats, adaptations or alternations to data in accordance with the need of the various users.
- c) **Maintainability:** A well designed system should require little structural modification after installation. If there should be modification it should be such that can be done with little confusion or risk of information loss.
- d) **Tailoring:** The format of the data or information should be concrete, practical or so clearly streamlined that it could be easily understood by the user. It is therefore necessary to tailor the format or suit the user(s) of the system.
- e) **Systems growth:** The design of the system should take into consideration, not only current information requirements, but also, the future needs which may arise as the school develops.
- f) **Systems reliability:** The very essence of developing reliable system is to provide speedy and reliable information. Thus it is necessary that the

systems designers establish clear operating procedures, controls and inbuilt mechanisms for information editing, to ensure that the data output is reliable at all times.

### **3.4 DESIGN FOR DATA INPUT, PROCESSING AND OUTPUT**

The design of data input is directly affected by the output data requirements. Thus the response time, the type of input document and document format are directed by the data output requirements at each level of the school. Also, the input document should be designed to support appropriately the processing requirements of the whole school.

#### **DATA INPUT DESIGNS REQUIRES PRE-ESTABLISHMENT OF A GOOD DATABASE**

The term database describes the total informational data that are available to the users of the school. The general characteristic required of a good database is that it should fit all user's requirements. In considering database, we use the following terms:

- Master file: That is a file that contains permanent records which fully described the items within the school (e.g. Budgets, staff roll, student population variables, facilities, etc.)
- Transactional file: That is a file used to accumulate data which are subsequently used to update the master file (e.g. current examination records, new admission, staff for study leave, addresses, etc.)



- **Table file:** That is a file containing permanent data which are used in normal information processing activities (e.g. staff payroll for monthly returns, addresses or contracts for monthly billing etc.)
- **Back-up file:** That is a file which is used to support the master file in event it is lost or destroyed. The back-up file is necessary or data security control.

**DATA PROCESSING DESIGN:** There are two types or data processing techniques, namely, batch processing, and on-line processing. In batch processing, various input transactions are collected into groups and entered into the machine for processing. For example, all categories of teacher/staff salaries, or all types of purchase orders are collected in one batch and put in together. This method is usually cost efficient and easier to understand.

On-line processing allows updates or inputs to be made at any time in the process to be made at any time in the process to the various master files. For instance the pay or allowances of a new teacher/staff can be input without being grouped by type of product. The on-line can be very expensive, and the design mechanism can be complicated.

**DATA OUTPUT DESIGN:** The format of the data output is very important because it directly affects the input format, the processing procedure, and the various requirements of the individual subsystems. The data output comes in form of reports either in hard copy (e.g. printer, tele-type) or soft copy (e.g. video display) depending on user's need. Hard copy reports are more often used

for documenting information on on-going or containing management of school transactions, while video displays (soft copy) are used for quick information such as schedules of work inventory etc.

### 3.5 COST AND BENEFITS ANALYSIS OF THE NEW SYSTEM

#### (1) OPERATING COST

Supplies (Diskettes, Ink Stationaries)	80,000.00
Equipment maintenance	25,000.00
Program maintenance	30,000.00
Labour cost (3 operators)	15,000.00
Utilities	20,000.00
2 Airconditions (2 and half HP)	60,000.00
Miscellaneous expenses	<u>35,000.00</u>
	<u>235,030.00</u>

#### (2) DEVELOPMENT COST

Systems Analysis and design for three weeks	40,000.00
Software development	25,000.00
4 Personal computers	350,000.00
Installations	<u>30,000.00</u>
	<u>445,000.00</u>

### 3.6 Benefits of the proposed system

- (1) Faster preparation of all the schools records.
- (2) Faster preparation of all the school's expenses.



- (3) Timely production of information when required.
- (4) Reduction of the use of paper work.
- (5) Automatic updating of records and maintenance
- (6) Elimination many repetitive work done manually.

### 3.7 INPUT SPECIFICATION

This describes the way in which data enters the system for processing.

The main input specification for this work involves certain number of database files that are been used:

This includes:

- (1) Admission (Adm. Dbf)
- (2) Exams Record (EXREC .Dbf)
- (3) Subject (SUBJECT. Dbf)

### OUTPUT SPECIFICATION

One of the most relevant features of an information system for users is the output it produces. The output specifications includes:

- (a) Slip Admission records
- (b) Total examination records.

## CHAPTER FOUR

### SYSTEM IMPLEMENTATION

This has to do with the actual working of the new system. It includes all the activities that must be done to convert from the old system to the new system. And these activities include site preparation, installation, data preparation, recruitment and training of personnels, final testing and start-up, maintenance and post implementation review.

#### 4.1 SYSTEM INSTALATION

The actual location of the new data processing system needs to be prepared. For a small system like owns, this may simply require reorganising the furniture in an office to make room for the computers special wiring, air conditioning, additional furniture, special flooring and a new security system. Once the site is prepared, the computer equipment is physically placed on the site and made operational. Several tests will also be performed by the manufacturer to ensure that the equipment is functioning properly.

#### 4.2 SYSTEM CONVERSION

The preferred method of conversion to be used for our system is the paralld method. The new system will be run together with the old system to ensure that the new system is working as expected before phasing out the old system, though not without lost duplication.



Since the personnel unit is about to be computerized, all its files must be converted into computer files. This is called data preparation. The personnel unit may hire some part-time data into data on the computer system.

Once the data has been converted into computer files, the part-time operators of the service company are no longer needed. The company programs will maintain and update these computer files.

#### 4.3 PERSONNEL : RECRUITMENT AND TRAINING

Based on the size of our new data processing system, a number of data processing personnel will be needed, and in some cases, trained.

Since the eventual success of any data processing system depends on how the system is used by the people within the organisation, a training programme (inservice/inhouse) should be conducted for the employees who will be using or dealing with the computer system. Fears and apprehensions about the new computer system need to be eliminated through the training programmes.

The list of data processing personnels needed for our new system is given below.

Designation	Number
Head of department	1
System analyst	1
Programmers	2
File librarian	1



#### 4.4 MAINTENANCE AND POST IMPLEMENTATION REVIEW

Like automobiles and manufacturing equipment, our computer systems should be periodically maintained. This includes checking to make sure everything is operating as intended and taking corrective action when necessary.

In addition to hardware, software must also be maintained by the council.

#### 4.5 A COMPUTERIZED APPROACH

A computer program generally is a sequence of instructions which a computer follows to perform a specified task.

In developing this system, the researcher used one of the computer languages known as Data Base Management System (DBMS) that is, database program utilizing Dbase IV software package.

Dbase IV is not regarded as part of high level languages but rather a structured Query Language, that enables one to construct his/her own database applications. A large number of build-in functions are provided, including mathematical functions, string manipulations, data type conversion functions, and time and date functions. The programming language includes commands to perform conditional branching, looping, calculation, sort records, format input/output screens, output reports, perform error checking and editing on input etc.



This means that there are available commands which the user can utilize to achieve complex task in programming by issuing correct commands. Dbase IV is user-friendly; and one does not need to be a computer expert before being able to use it.

The written program for developing this system is the application programs. It is broken into MODULES. Each module comprises of a program that performs a specific task. The modules are connected using one input and one exit.

There is one aspect of the module that controls the program which is called menu of command files. This is made up of six options. It is developed to enable the users select the specific function they wish to carry out.

The database structure of the master file is also created. This is called Precs.dbf (Personal records database file.)

The main programs for the personnel records are data entry/append, edit/update, delete, view/browse and report programs. Each of these programs utilizes the master database file (Precs.dbf).

To ensure confidentiality and authenticity of the user, a closed password module and system control for user input in specific fields have been built into the software package.

All the programs for this system are attached to Appendix 3.



## CHAPTER FIVE

### CONCLUSION AND RECOMMENDATION

There is nothing more difficult to plan, more doubtful of success, nor more dangerous to manage than the creation of a new system. To the initiation there might be opposition from beneficiaries of the old system and little or no support from those that would gain from the new system.

Our management system, having been designed based on the feasibility study and analysis carried out, is expected to be a personnel management tool in the hands of the Government Secondary School Shiroro personnel unit. It is designed to make their job a lot easier, faster and neater.

At the punch of the correct buttons on the computer, any information required on any of the student, will be displayed on the screen and printed out in hard copy if so desired. Teachers postings, appointments, promotions, leave roster, etc are made a lot easier as information on every staff is readily available and accessible. The advantages of this modified and improved personnel management system over the existing system cannot be over emphasized.

For proper and total utilization, the researcher recommends that a simple easy to maintain and operate system be installed. Finally, recruitment and training of personnel in relevant computer applications as earlier mentioned is necessary and their continuous exposure to latest development in the discipline is recommended.



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MAIN PROGRAM

Inkey = φ  
Inkey = upper  
@ 1, 1 say "  
inkey = a  
DO CASE

CASE = UPPER 'AaEeDdCc'

IF CASE = UPPER "Ae"  
DO Add Exam

If Case = Upper "Ee"  
DO Edit Exam

If CASE = UPPER "Dd"  
DO Del Exam

If Case = Upper "Cc"  
DO CAL Exam

If CASE = UPPER "Rr"  
DO Rep Exam

End if  
End if  
End if  
End if  
End if

End Case

Add Exam Program  
Clear  
SET STATUS OFF  
SET SAFETY  
SET DATE BRITISH

USE EXAM.DBF  
DO WHILE .NOT. EOF()  
STORE SPACE (5) TO MS\_CODE  
STORE SPACE (10) TO MS\_NAME, MM\_NAME  
STORE '000' TO MCA1, MCA2, EXAM  
STORE 0 TO FALL  
STORE C TO D (11) TO MDATE, MD\_BIRTH  
STORE SPACE (10) 10 MADDRESS  
STORE SPACE (2) TO MSTATE  
STORE SPACE (5) TO MLGA  
STORE SPACE (8) TO MSUBJECT, MTOWN  
@ 0, 0 to 0, 75" DOUBLE  
@ 2, 7, say" NAME OF SCHOOL  
@ 3, 7 to 3, 25



```

@ 5, 7 SAY "Student Code" GET MS_CODE
@ 5, 16, say "NAME" GET MS_NAME + MM_NAME
@ 7, 7 SAY "Address" GET MADDRESS
@ 7, 7 SAY "DATE ENTRY" GET MDATE
@ 7, 29 SAY "DATE OF BIRTH" GET MD_BIRTH
@ 9, 7, SAY "FIRST ASSESSMENT" GET MCA1
@ 10, 7 SAY "SECOND ASSESSMENT" GET MCA2
@ 11, 7 SAY "EXAM" GET MEXAM
@ 13, 7 SAY "Subject Name" GET MSUBJECT

```

READ

Edit = Exam.prog

Clear

Set Status off

Set safety on

Set date British

Use exam Dbf

Do while .not. E of ()

```
@ 0,0, to 0, 75 Double
```

```
@ 2, 7 Say "Name of School"
```

```
@ 2, 55 say "Edit Menu"
```

```
@ 5, 7 to 3 25 "Edit Menu"
```

```
@ 5, 7 say "Student Code" GET S_code
```

```
@ 5, 16 say "Name" GET S_Name fm_name
```

```
@ 7, 7 say "Address" GET MADDRESS
```

```
@ 7, 7 Say "Date entry" GET Date
```

```
@ 7, 29 Say "Date Birth" GET D_BIRTH
```

```
@ 9, 7 Say "first Assessment" GET CA1
```

```
@ 10, 7 Say "Second Assessment" GET CA2
```

```
@ 11, 7 Say "Exam" GET EXAM
```

```
@ 13, 7 Say "Subject" Get subject
```

```
@ 2, 10 say "Enter Student Code"
```

Get Mcode

Locate for mcode = code

If found ()

End if

```
@ 1, 1 say "No such student Exist"
```

END0

Del Exam.Program

Clear

Set Status of

Set safety on

Set Date British

Use Exam Dbf.

Do while not . E of ()

```
@ 0, 0,, to 0, 75 Double
```

```
@ 2, 7 say "Name of school"
```

```
@ 2, 55 say "Edit Menu"
```

```
@ 5, 7 to 3, 25 "Edit Menu"
```

```
@ 5, 16 say "Student code" GET S_code
```

```
@ 7, 7 Say "Address" GET MADDRESS
```

```
@ 7, 17 Say "Date Entry" GET DATE
```

```
@ 7, 29 Say "Date of Birth" Get D_BIRTH
```



@ 9, 7 say "First Assessment" GET CA1  
@ 10, 7 say "Second Assessment" GET CA2  
@ 11, 7 Say "Exam" GET Exam  
@ 13, 7 say "Subject" Get Subject  
@ 2, 10, say "Enter Student Code"  
Get Code

Locate for mcode = code  
If found  
Delete  
Pack

Cal.pg  
Clear all  
Clear  
Set status off  
Set safety on  
Set escape off  
Set date British

Use exam.dbf  
Sort on S-code to Exam 1.dbf  
Use Exam 1  
DO while not E of  
Set filter to S\_code  
TOTAL = CA1 + CA2 + Exam  
Replace TOTAL with Total 1  
Set filter  
Loop  
Enddo

Rep. Exam.prog  
Clear  
Clear all

Set status off  
Set date birth  
Set escape off  
Use Exam 1.

DO while . not E of ()  
@ 0, 0 to 0, 75 Double  
@ 0, 5 say "Report Menu"  
@ 4, 5 Say "School Name"  
@ 5, 5 SAY S\_co S\_code  
@ 5, 12, say S\_name + m\_name  
@ 8, 5 say CA1 + " " + CA2 + " " + Exam  
@ 10, 5 Say TOTAL  
@ 11, 5 Say "Remark"  
@ 14, 15 say "Principal Signature"  
If E of ( )  
Exit  
End do

S\_code Ch (5)  
S\_name Ch (10)  
M\_name ch (10)  
CA1 num (3)



CA2 num (3)  
2 Exam num num (3)  
Total num num (3)  
3 Date of birth D (8)  
Date Entry D (8) (8)  
4 Address ch (10)  
5 State ch (ch) (2)  
6 LGA ch (2) (5)  
7 Subject ch (ch) (8)  
8 Town ch (ch) (8)  
9 ch (8)