

# Problems Facing Computerization of School Records A Case Study of Secondary Schools in JOS, Nigeria

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## ABSTRACT

The study investigates the problems facing the computerization of records in selected Secondary Schools in Jos and the susceptibility of the prevalent manual processing of data to human errors. Data were collected through the observations made during physical visits to the schools' computer centers, use of questionnaires and personal interview of some school Information and Communication Technology (ICT) personnel. The respondents were school administrators and ICT personnel. Ten Secondary Schools used included one Federal Government College, one Command Secondary School, owned by the Federal Government, one State Government owned school and seven private schools within Jos, Plateau State, Nigeria. The results show that the greatest hindrance to the computerization of academic records in the Schools is inadequate funding.

**Keywords:** *Computerization, Database, Information, ICT, School records.*

## 1. INTRODUCTION

Record keeping systems are as diverse as the people who use them. Some personal records are kept manually in diaries and journals. Some official records are kept in file jackets and log book for important events. Ledgers are used for financial records and register for school attendance etc.[1] ICTs has revolutionized the way records are kept nowadays, most modern organizations now prefer to store their records electronically in computers from where hard copies of reports can be generated and printed whenever it is needed.[2]

Most schools in Europe and the United States have adopted the system of computerizing school records, but in Africa, only very few schools have partially computerized their school records.[3] Records stored includes standardized tests scores, high school transcripts, report cards, recommendations from principals, counselors and teachers, extra-curricular involvement and detention records.[4]

The platform for this innovation in record-keeping is ICT. ICT is a generic term referring to technologies that are used for collecting, storing, editing and passing on information in various electronic forms. ICT is the product of the marriage between Computer Technology (essentially for information acquisition, storage and processing) and Telecommunication Technology (for information distribution electronically). Hence Computer + Telecommunication = Information Communication Technologies (ICTs). ICTs evolved as components of Computing Technology, which also comprises of Computer Science, Electronic Technology and Information System. [5-6]

Computerization of school records has the potential to radically change and improve the educational process in

our schools because education is primarily about information and communication. Use of ICTs in record-keeping could be a more efficient, less laborious and more accurate way of doing same old job. The question then remains, why are our schools' administrators reluctant to adopt computerization of the school records despite the obvious benefits that could be derived from it. Among several reasons that could be responsible for this attitude are: ignorance of the benefits, lack of ICTs facilities, inadequate competent manpower, epileptic power supply, prohibitive cost of equipment and poor funding of schools. This research work is therefore an attempt to find out the factor(s) responsible for the non-implementation of the computerization of school records in the city of Jos, Plateau State, Nigeria.

Teaching and learning radically changed with advances in technology. Research shows that the computer can be an effective tool in both teaching and learning and for that reason, school districts throughout the United States support schools by purchasing computers and software for individual classrooms. As a result, many school districts are using real-time Internet informational systems to manage student data (attendance, grades, homework, etc.) Online grading programs allow teachers to spend more time planning instruction instead of figuring grades by hand. Such systems automatically average students' grades, and students and teachers can keep track of grade averages and percentile scores. Likewise, online grade books produce professional looking documents that can be viewed either online or printed out for parents to view. For those teachers who prefer to use authentic assessments, writing portfolios can be kept online easily, and grading rubrics and assessment checklists also can be posted online. Overall, online grading systems

allow teachers to easily keep track of student progress while maintaining professional documents.[7-12]

The benefits are numerous. Students have immediate access to their grades, and they can even read detailed feedback from essay exams online. Students can view their online grades anywhere in the world, any time of the day.[13]

## 2. METHODS

The plan and strategy which guides the collection and analysis of data by the researchers in order that the research question can be answered for this study consists of:

- i. Identifying relevant Information and
- ii. Selecting the right sources for getting the information

Primary and secondary sources of data were used in sourcing for necessary information for this research work. The procedure involved physical visits to the computer centers of these Secondary Schools in order to get firsthand information about the availability, adequacies, up-to-datedness and functionality or otherwise of ICTs facilities in the schools.

Relevant data were also collected through the use of questionnaires aimed at eliciting responses to the relevant information for this study coupled with personal interview of the school IT personnel. The method adopted was random survey of the schools. Two copies of the questionnaires were sent to each school, one for the administrator and the other one for IT personnel. Schools selected include one Federal Government College; one Command Secondary School owned by the Federal Government, one State Government

owned school and seven private schools within Jos, Plateau State.

The response rate is about 70 per cent for the schools visited. About 20 individuals were involved including school administrators, IT personnel, classroom teachers, administrative staff and other people responsible for data. While the schools were randomly selected, the respondents were not, the bias was towards those knowledgeable in ICTs and therefore competent to answer the technical questions posed in the questionnaires. 57% of the respondents were therefore computer/ICT personnel. The questions are structured to elicit responses from respondents on how data are processed and stored in these schools with emphasis on the use of computers and ICT facilities.

## 3. RESULTS, ANALYSIS AND DISCUSSION

The following tools were used in analyzing the data collected for this study:

- i. Tables for organizing and summarizing data received from all the respondents.
- ii. Mathematical percentage analysis for the summarized data.
- iii. Visualization of results graphically using Microsoft Excel pie-charts.

The following collated results serve as the basis for the conclusions and recommendations.

### a. Summary of data from respondents:

**Table 1:** Status of ICT Unit/Centre

QUESTION	ACTUAL NUMBERS			IN PERCENTAGES (%)		
	YES	NO	TOTAL	YES	NO	TOTAL
Existence of distinct computer centre	10	4	14	71	29	100
Adequacy of ICT facilities	4	10	14	29	71	100
Sufficiency of qualified IT personnel	8	6	14	57	43	100
Availability of dependable power supply	9	5	14	64	36	100
Adequacy of funding of centre	8	2	10	80	20	100

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Table 1 shows that most (71%) of these schools have these computer centers. computer centers but there are no adequate ICT facilities in

**Table 2: Record-keeping practices**

QUESTION	ACTUAL NUMBERS			IN PERCENTAGES (%)		
	YES	NO	TOTAL	YES	NO	TOTAL
Use of computer-based record-keeping system	5	9	14	36	64	100
Full/partial office automation	4	8	12	33	67	100
Availability of database	6	8	14	43	57	100
Up-to-datedness of methods/tools used	9	5	14	64	36	100
Existence of official policy on confidentiality	13	1	14	93	7	100

Table 2 shows only few (36%) of these schools even fewer (33%) have their administrative offices have adopted computer-based record-keeping system and automated.

**Table 3: Data processing**

QUESTION	ACTUAL NUMBERS			IN PERCENTAGES (%)		
	YES	NO	TOTAL	YES	NO	TOTAL
Computerization of the calculation of C.A. results'	2	12	14	14	86	100
Use of computer-generated students' reports	1	13	14	7	93	100
General use of computerized data processing	2	12	14	14	86	100
Errors often encountered in manual data processing	4	9	13	31	69	100
Computerized data processing as antidote to errors	14	0	14	100	0	100

Table 3 shows only very few (14%) of these schools have computerized their data processing despite their conviction that computerized data processing is the antidote to errors often encountered when manual processing is adopted.

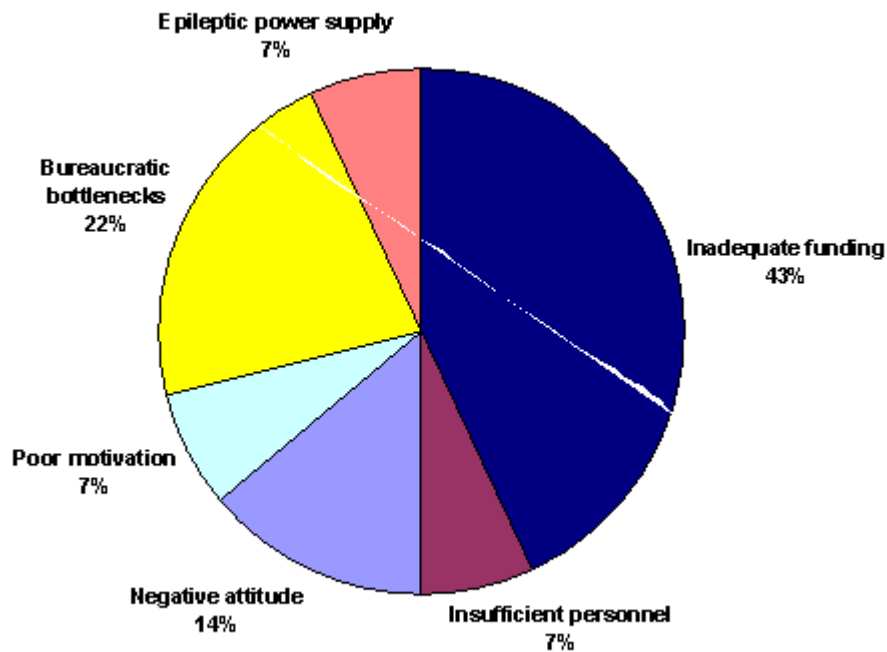
**Table 4: Greatest hindrance to computerization of record-keeping**

OPTIONS	RESPONSE (NUMBERS)	RESPONSE (IN %)
Inadequate funding coupled with prohibitive cost of equipment	6	43
Lack of qualified IT personnel in schools	1	7
Epileptic power supply from NEPA/PHCN	1	7
Negative attitude among staff towards embracing ICT	2	14
Poor reward system and motivation for staff	1	7
Bureaucratic bottlenecks and rigid organizational structure opposed to innovative changes	3	22

TOTAL	14	100
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Table 4 shows that the greatest hindrance to the computerization of academic records in the Secondary

Schools in Jos is inadequate funding coupled with the prohibitive cost of the equipment (43%)



**Fig 1:** Pie-chart showing hindrances to computerization of records in schools

**Table 5:** Classification of distribution of questionnaires

Official Status	Number distributed		Number returned	
	Actual Number	Percentage (%)	Actual Number	Percentage (%)
Principals/V.P.	10	50	6	43
IT Personnel/Teachers	10	50	8	57
Admin staff	-	-	-	-
Others	-	-	-	-
<b>Total</b>	<b>20</b>	<b>100</b>	<b>14</b>	<b>100</b>

Table 5 shows that 50% of the respondents were deliberately chosen to be computer/ICT personnel in order to ensure the information is gotten directly from the people who work in the area of record-keeping and computer units of the schools.

## b. Summary of Findings

The following are the major findings from this study:

1. Majority of the Secondary Schools already have computer centre or ICT department as a distinct unit.
2. The ICT facilities such as networking of computers and internet access are either non-existent or grossly inadequate in most of the schools visited.

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3. Most of the schools have at least one IT personnel who doubles as classroom teacher.
  4. Most of the schools have standby generators as back-up for NEPA PLC/PHCN.
  5. Very few of the schools have database for keeping records.
  6. Almost all the schools have official policy on confidentiality of students' records.
  7. Students' reports are still being manually collated and handwritten in almost all the schools.
  8. All the respondents agreed that manually collated and handwritten reports are susceptible to human errors.
  9. All the respondents also agreed that computerized data processing is the antidote to these errors.
  10. The survey shows that the greatest hindrance to the computerization of school records in Jos is inadequate funding coupled with the prohibitive cost of the equipment.
2. Recruitment of qualified, dedicated IT personnel to work in schools, not just for teaching computer literacy but for processing of data and record-keeping.
  3. Re-training of teachers and other school staff in order for them to acquire basic expertise, skills and competencies in electronic spreadsheets and database management system.
  4. Database management system should be adopted in all Secondary Schools for proper record-keeping. Without any doubt an updated and electronically accessible database, issued via an authoritative source such as the director of computer operations would be a highly valuable tool for any school.

Advantages of using such database include:

- Coping with large volume of data
  - Increased speed of data processing
  - Cutting down of repetitive task
  - Increased speed of access to information
  - Consistency and accuracy
5. School administrators should ensure that the data ICT team receive is accurate, timely, and in a format that can inform classroom instruction.
  6. The administrators should also work with the ICT team to design and implement data systems.

## 4. CONCLUSION AND RECOMMENDATIONS

### 4.1 Conclusion

1. The greatest hindrance to the computerization of academic records in the Secondary Schools in Jos is inadequate funding coupled with the prohibitive cost of the equipment (43%). Other hindrances to lesser extent and varying degrees are: lack of qualified manpower, epileptic power supply, poor motivation of staff, negative attitude towards embracing ICT and bureaucratic bottlenecks in administration.
2. Manual data processing could be tedious, laborious, inefficient and susceptible to avoidable human errors.
3. Computerized data processing and record-keeping using electronic spreadsheets and relational database could drastically reduce errors and improve efficiency of data processing.

### 4.2 Recommendations

The following recommendations are made to improve the record-keeping system in Nigerian Secondary Schools.

1. Adequate funding of ICT/computer centers of Secondary Schools. This will enable them to be well-equipped. There may be need for special vote for ICT in school budgets.

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