

EDUCATIONAL MANAGEMENT IN AFRICA

Papers in Honour of Professor John Iheukwumere Nwankwo

Edited by:

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CHAPTER 46



ESTABLISHING MANAGEMENT INFORMATION SYSTEMS IN NIGERIAN SECONDARY SCHOOLS

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Introduction

Information has been variously described as power, a key tool in the present global village. The term Management Information Systems [MIS] can be used synonymously with Information Technology [IT]. While MIS is the main thing, IT is the carrier or catalyst that propels MIS. It is agreed among scholars in the field of information systems, information science or information technology that information is the key and core of any endeavour in the present world. Nwankwo (1985), emphasises information as anything that gives its possessor an advantage over competitors for the same thing. Haag, Cummings and Dawkins (2000), view the present global era as the information age and posit that in this age, only information can make any one excel in any chosen endeavour. Among African and non-African scholars that have defined or described information are Aiyepoku (1978; 1982 and 1993); Adimorah (1993) and Isah, Fabunmi and Emunemu (2012). Consensus is on the point that information is central to any organisation. In today's organisations, the school system is very important. Apart from its importance that was well articulated by Osokoya (2003), the educational system has grown extremely complex (Nwankwo, 1982). All levels of education in developed and the developing world are growing rather complex. According to Owolabi (1984) and Owolabi (2005), the demographic variable dynamics all over the world has continued to change policies and this in turn affects education. These effects have culminated in the need for continuous policy changes and formulation processes. Nnebe (2008), points out that the Nigerian government is interested in the formulation of policies that can equate Nigeria in the information age to advanced democracies. To this end, government of Nigeria has been and is still proposing policies that will assist the growth of information management, prominent among the issues raised in the document is the issue of an Information Technology Policy (IT). It is well-known that though Nigeria has an IT policy, it has not got an (ICT) policy and going by the opinion of Alli (2009), IT, ICT and MIS complement one another.

According to Haag et al (2000), the world is presently in the information age. This assertion is complemented by Babalola (2010). The level at which information moves has transformed the world into a global village, in essence, every human endeavour today is influenced by the level of information available. These findings have been captured in different subsections in information studies either as acquisitions according to Erwat (2005), Availability and utilizations (Isah, 2012) and Management (Alli, 2009 and Nwankwo, 1985).

The importance of IT, ICT and MIS are also well-captured in the works of Okhiria (2007), in terms of student quality. The study emphasised that the cause of difference between students produced in the third world universities and those in first grade universities as in the United States of America, the western and eastern world blocks is their levels of exposure to ICT. While graduates of third world countries may have no interactions with ICT infrastructure throughout their tertiary education, their counterparts in other parts of the world as Europe and America have been utilizing such facilities for years from their high school days. There is therefore need to find a way of incorporating these recommendations into our school system.

It is known that in pursuit of the ideas of these scholars, government has in recent times been seeking ways of incorporating these into the Nigerian secondary school system for example, the government of Nigeria has made a new syllabus policy on ICT for senior secondary school students (SSS) that will make ICT a compulsory examinable subject from 2015 June. Government purpose for introducing ICT to secondary education at this time is understandable and important. The methodology of such introduction forms subjects of discourses in conferences, workshops and seminars as the process of implementation could still be subject to amendments. The principle behind the introduction of ICT appears good, this paper hopes that the programme will not end up like other good educational programmes that were poorly executed in Nigeria.

Overview of Previous Educational Programme Implementation in Nigeria

Both pre-independence, at independence and post independence, the Federal Government of Nigeria initiated and is still initiating educational policies and programmes that could at best be described as failures and where they succeeded at all, it was partial success. Let us look at the pre-independence education policy of Southwest and Southeast Nigeria, Government take-over of schools, Universal Primary Education (UPE) scheme, the 6-3-3-4 education policy and today the Universal Basic Education (UBE) policies. What were their effects? This paper will simply overview these programmes, drawing out their challenges to enable new decisions.

Fafunwa (1974), exhaustively discussed the arrival of the missionaries in Nigeria in the 1840's and went ahead to discuss the evolution of western education in Nigeria. Fabunmi (2004), discussed some of the colonial, independence and post independence education policies. Again, Osokoya (2003) succinctly discussed the 6-3-3-4 policy in education in Nigeria. Akangbou (1985) gave insights into some of the reasons why these programmes failed especially educational policy programmes. Among issues and items raised by Akangbou (1985) and Osokoya (2003), were those of inadequate planning, poor data, insufficient funding, inadequate personnel, corruption and instability in educational and national policies.

It is well known that the first post independence educational planning programme popularly called the Ashby commission failed because it depended heavily on unreliable statistics especially the Harbinson rule of the thumb principle (Akangbou, 1985; Fabunmi, 2004 and Isah, 2012).

The failure of that policy generated another set of challenges faced by all segments of education today. The challenges of the colonial education led to the agitations for a new education curriculum that would be more practical oriented as the former was highly theoretical. The agitation brought in its wake the then new national policy on education 6-3-3-4 system of education that had six years in the primary, three years in junior secondary, three years in senior secondary and four years in tertiary education. The policy which was to take effect from 1981 took effect in some states then but failed to take off in other states due to political agitations. A major insertion into the policy was the introduction of the Junior Secondary School (JSS) for 3 years. The JSS was designed to equip students who will not be interested in the senior secondary school but might terminate at that level. The syllabus introduced new subjects as wood work, introductory technology, home economics, agricultural science, electricity etc. The introduction of these subjects required the purchase of new and expensive equipment. Though these equipments were bought, personnel was not available to take adequate use of them. Osokoya (2003) presents the structure of personnel needed on a state by state basis among the then 19 states of Nigeria at the commencement of the programme in 1981. Coupled with the foregoing, the Federal Government of Nigeria (FGN), purchased heavy wood work and other workshop equipment from foreign countries that were either stolen or rotted away as there was no concrete plan to make use of the equipment.

After the 6-3-3-4 system of education, the Nigerian 1991 constitution decentralized education for example primary education was shifted to the Local Governments while the other levels of education were moved to the state and Federal governments respectively but the 1999 Nigerian constitution allowed the provision of education by the private sector contrary to the 1973 edict/decrees that ceded the schools from the private sector especially from the missions to government. However, while it is agreed that Nigeria is a nation in transition, our educational policies have been riddled with several inconsistencies and summersaults. Such inconsistencies have been associated with poor planning and its effect is manifest in the current social malaise of examination malpractices due to the struggle to enter higher institution at all cost, admission challenges for secondary school graduates wishing to go into higher institutions and high rate of unemployment. A current issue that has cropped up in the education cycle is that of new curriculum introduced into secondary education in Nigeria and includes the adoption of certain subjects as; civics education where government is already a subject, ICT in which many schools are yet to get ICT laboratories etc. However, these issues will be revisited in the challenges examined by this paper.

Concepts of ICT and MIS

It is important at this time to have a clear concept of what ICT is. Folorunsho (2003), explained ICT to mean its content as composed as Information, Communication and then facilitated by Technology which when put together becomes Information Communication and Technology (ICT). The Technology in there made a great change to the term because information can be provided manually. Manual information dissemination was the vogue when the post offices were the vogue in some years past. Communication was also possible but manually too but today, technology has changed all these. Researches and development in the area of information and communication has transformed the later. Haag et al (2000), explain that though information has been changing in its scope and content, its dissemination occasioned by technology has been the main thing for example, the study showcases the growth of information and its influence by communication in the 40years as follows;

The era of the 1970's was characterized by centralized computing using a mainframe and from it disseminating information. The transformation continued into the 1980s and 1990's till today.

Mainframe computer

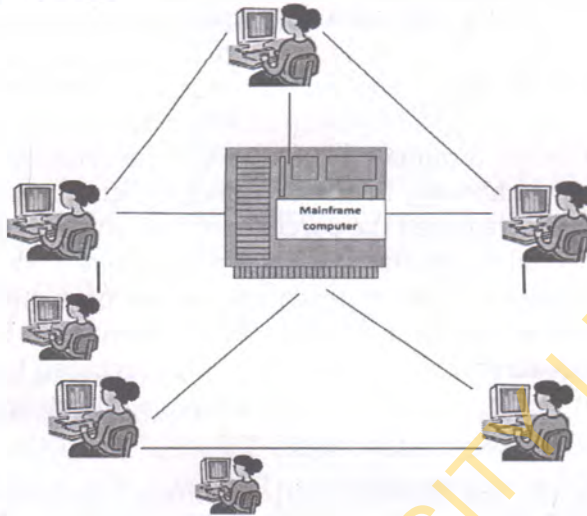


Figure 1: Computer and Information Technology in the 1970's - 1990's

Source: Haag, Dawkins and Cummings (2000:44)

In the ICT of today in this age, Haag et al informs that the tempo has changed. Instead of the mainframe computer, centralized information has given way to decentralized information. While networking and information sharing has been in vogue, the evolution of the database has been metamorphosing and information can now be organized to be companywide, personalized or otherwise. Figure 2 show cases the new concept of organisation management of information.

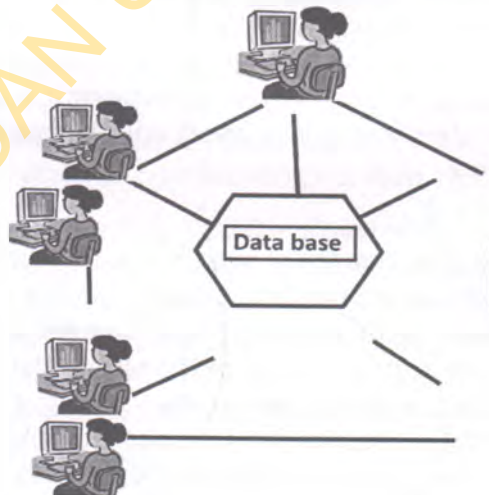


Figure 2: MIS in the 21st century

Source: Haag, Dawkins and Cummings (2000:44)

Establishing MIS in Organisations (Schools)

Challenges to MIS Establishment in Nigerian Schools

Several challenges exist in establishing MIS in schools. Several scholars appear to have exhaustively discussed these but for the purpose of this paper, the following challenges exist;

1. Funding Education and MIS Provision in Schools

Among the challenges of MIS in educational settings is funding. Babalola (2003) examining the issue of educational funding in Nigeria observed that it is a fundamental problem to the provision of school infrastructure. The same applied in another study by the same scholar; Babalola (2010). A similar study by Akpochafo and Fellio (2006) including that of Onuka and Emunemu (2009) dealt with the same issue. Babalola (2010) observed that educational provision in Africa south of the Sahara was far much more expensive due to the number of individuals required to be catered for. In the case of Onuka and Emunemu (2009), a distinction was made between rural and urban educational provision in terms of cost and quality. Akpochafo and Fellio (2006) decried the poor state of education due to absence of enough funds to sponsor education. While the studies of Onuka and Emunemu (2009), Babalola (2003) were fundamentally targeted at general education, Babalola (2003), was specifically target at digital education. To fund MIS in secondary schools, a special fund must be provided that will enable government and its ancillary organisations do that. The absence of such funds may have prevented adequate planning for the administration of MIS in schools.

2. Infrastructure

The state of infrastructure in Nigerian schools has not been encouraging and it is one of the major factors affecting ICT establishment. In a document by Nnebe (2008), the importance of ICT for developing nations was well emphasized. In Zambia but all over Africa was emphasized. This same issue was well discussed in Isah (2012). Again, Babalola (2010), emphasized the role of infrastructure that a comparison was effected between the cost of ICT infrastructure among developed and developing nations. In Babalola (2010), the challenges on the pathway of developing nations was so clearly spelt out that it takes quite some understanding to get the point. Babalola (2010) pointed out that the cost of bandwidth in Sub-Saharan Africa is 10 times the cost in the developed world. Again, personnel for maintenance is lacking while facilities as Vsat that could facilitated the utilization of ICT is wanting. Most Nigerian secondary schools are not connected to electricity from the mains while it is practically impossible to purchase a generator which serve as the basic ingredient for a good ICT foundation. While poor funding of schools has been exhaustively discussed in the preceding paragraph, a combination of the 2 can be described as devastating. In this regard too, schools are forced to grapple with such challenging factors as; hardware, software, electricity, funds, personnel etc. Among the foregoing factors are those associated with political influence and power politics.

3. Policy Implementation Challenge

This paper perceives the policy implementation challenges in the wrong perception meted out to the general stakeholders in ICT and education by the Federal Government Policy (FGN) on educational provision that falls within the concurrent legislative list with the 1999 Nigerian constitution. There is a wide dichotomy between the type of education provided between public and private schools. In the city of residence of thus researcher in Nigeria, it can be seen that education provided by the private sector far outweighs the education provided by the public sector in Nigeria in terms of quality but access to the various types of education is a function of cost, choice and means. Among public schools in Ibadan metropolis of Oyo state,

the Ministry of Education ranks them with such demographic characters as; age, infrastructure etc. It is evident that old schools as Ibadan Grammar School, Bishop Phillips Academy, Government College, Ibadan, St. Anne's, Molete and Queen's School, Apata will not be in the same category as Ajibode Grammar School, Fiditi Grammar School etc. The old schools have facilities which relatively young schools do not have. For example, a virile old boys club or society, power and financing Parent Teacher Association (PTA) that maintains that the standards of such schools must not depreciate; for example, a visit to Ibadan Grammar School in Molete impresses on the visitor a powerfully magnificent building labeled ICT. The building was donated to the school by an old student who happens to be the founder and owner of Globacom Nigeria, Chief Michael Adenuga. With such a building, there would be an impression that Nigerian secondary schools have ICT.

However, the same is not true for other public secondary schools. For the private sector, profit is the driving motive hence proprietors of schools can go to any extent to obtain loans which are recouped later through the payment of school fees. For this reason, a visit to such private schools as Olashore International School in Iloko, Osun state provides another angle to ICT establishment in private schools, Atlantic Hall, Epe in Lagos State, Valencia College, Akobo, Ibadan all have state of the art ICT laboratories. The private schools compete for ICT excellence in secondary schools.

On a visit to a public school in 2010 during a survey organized in collaboration with the Oyo State Ministry of Education by United Nations Children Education Fund [UNICEF], the researcher was in a team that visited schools in Ibadan rural. In a certain public primary school, government supplied ICT hardware but, it was observed that the whole hardware were packed into a single room in the compound as there was no sufficient space to display the equipment for utilization. In the morning of the visit of the research team, a suspect [thief] was apprehended in the school premises by the only security man employed for the school by government that watches 24hrs at 2.00am trying to gain entrance through a broken window to chart away the ICT items. The equipments are available in the schools but not utilized and at the same time not secured. These are grave challenges to ICT establishment in the Nigerian school system. With this problem, the implication is that government will keep spending the same money over and over again to replace equipment already purchased. These were some of the problems that bedeviled the implementation of the 6-3-3-4 education system in Nigeria as observed by Osokoya (2003).

4. Planning and Data Problems

The problem of data for planning cannot be over emphasized. Despite concerted efforts, it has been a severe problem to schools, colleges, universities and governments in Nigeria and other developing countries. In the case of Nigeria, plans in whatever guise (educational, governmental) etc have never really succeeded due to absence of data and this makes nonsense of any plan. If government decides to supply biros to all primary and secondary school students, absence of correct data will derail the plan as the exact number of the item to purchase will be unknown and such situations have always ignited corruption as no policy is ever completed and no completed policy is ever accurate. It is evident that such public fund gulping projects as the National Electricity Company of Nigeria popularly referred to as Power Holding Company of Nigeria cannot authentically state the number of households that are on its national greed. At best, its estimates are projections from inaccurate estimates worsening the situation. In the

light of the forgoing, how can an accountant know what to expect from consumers in a month, is it possible to also accurately estimate what is consumed? These apply to all sections of the economy with education inclusive. The absence of accurate and updated data has been a problem to Nigerian beginning and being specifically pinpointed from Nigeria's first post independence educational planning exercise that made use of Harbinson's rule of the thumb principle (Akanbou, 1985 and Fabunmi, 2004).

5. ICT and MIS Curriculum

A curriculum describes and prescribes the course of action in a particular discipline (Isah, 2014). In Isah (2013), a curriculum was found apart from its implementation to include its planning, implementation and process. Again, Isah (2012) observes that in Nigeria, there is an IT policy that was also corroborated to by Nnebe (2008) but as at today, Nigeria cannot effectively boast of an ICT policy. In recent times, the failure of the objective of government to attain its IT policy that required that all government employees must be ICT compliant by the year 2002 has brought other issues in its wake. Another objective which government pursued vigorously towards the end of the last millennium was for all government business to be conducted electronically. These have failed due to many of the factors already discussed as challenges. To appear to combat these challenges, government in a recent volte face has introduced specific subjects into the Nigerian secondary school curriculum that are examinable. Among these are ICT. Again, under this section, the studies of Akanbou (1985), Fabunmi (2004) and Osokoya (2003) come to play with the question how adequate is government preparation for the implantation of these programmes? How many computer laboratories have been built and equipped in public primary and secondary schools in Oyo state before the formulation of the policy? How many stake holders were informed of the policy? Was there an awareness campaign but is the policy bad after all? There is no gainsaying the fact that with current global developments, ICT stands as the 'in-thing' in this millennium and such the idea is welcomed. People or a stakeholder opinion might not be required to take a decision as to whether to adopt the idea or not but it is required to plan the implementation.

Questions that stakeholders ought to have answered for government at the planning stages are; since government cannot provide enough buildings and train teachers for the implementation of this programme, what should be done? Should we kill it? It is not unlikely that some stakeholders including teachers whose skills needed to be updated will offer useful suggestions. As seen in Osun state, students and pupils of public schools were given laptops to take away. However, this study was unable to establish the extent of utilization of such materials by the students and their handlers. This study considers the idea of purchasing laptops and i-pads for pupils to take home as colossal waste as such funds used in doing that is like a man holding cash in his hands and throwing same into the sea. Our society is not secured enough to warrant the level of security required to keep those equipment. Again, if government expected the students and pupils to return the equipment on completion of schools, it is a tall dream indicating that for each other child that enters the school system, government has to purchase a new one. How long will government be able to do that?

However, as at today, the first set of those to write the West African Senior School Certificate Examination (WASSCE) on ICT are just trying to do so, hence the programme is not ripe for evaluation.

6. Complex Educational Structure and Politics

Another challenge confronting the establishment of MIS in Nigerian secondary schools is the complex nature of our educational system. Arising from the 1999 constitution, the education sector has been decentralized in such a way that education is on the concurrent legislative list. This implies that education is provided by Federal, States, Local Governments and the private sector. In this regard, the concept of unity of command becomes lacking. With the establishment of democratic structures, there appears freedom with the Nigerian education laws for states and local governments and in terms of the private sector, government serves only as a regulator. To this end, most state governments might not share the vision of the government in power on educational issues especially in the area of implementation. Again, the private schools appear more focused due to the private initiative concerning profit. To this end, states and Federal government could be implementing similar or same policies in differing manner calling to question the issue of quality control in the MIS section.

7. Personnel Challenges and Equipment Maintenance

The problem of personnel challenges at university levels in ICT related issues cannot be over emphasized (Isah, 2012). In another study by Emunemu, Oyekan and Isah (2012), it was observed that teachers in Nigeria hardly get in-service training in the form of workshops, in-service training and conferences. The study of Emunemu et al (2012), explained that when teachers are sent for in-service training or on the job training, their concern most times is the financial allowances allotted to the exercise and hence in most cases the objectives of the programme are not met. ICT and MIS as well as their importance have become very evident between the last 2 decades of the 20th century and the 21st century. Most teachers were in training at that time and ICT had not been introduced into the curriculum of teacher training colleges. As at today in Nigeria, though ICT is introduced into the curriculum of pre-service teachers, teachers in service who are at leadership positions do not have such skills. Absent skills include; operating a simple computer system, possession of a valid e-mail address for communication or being able to log into the world wide web. These short comings have put the system far behind the advanced world.

It is unfortunate that today, a visit to most schools will show teachers completely devoid of knowledge of the ICT inclusive of universities and cutting across gender. ICT cannot be operated in isolation of the operator. Further to this, the adulteration of ICT products in Africa and in Nigeria to gain access has further exacerbated the issue. Fake products find their ways through the ports into the Nigerian markets with unwary consumers bearing the brunt of the unethical greed of business men. Such challenges often result in large consignment of ICT equipment waiting for replacement or full maintenance. In most schools as explained by Alli (2009), in Bayero University, Kano; several challenges especially the rapid innovations in the field of ICT serve as challenge to MIS. Basically, ICT and MIS go together. Once a part of the hardware goes obsolete, the process of getting fund for replacement is not easy. Before the funds arrive, another product has replaced the one in question and the part being sourced for may be out of reach and such could paralyze the whole system. Remediation for such situations often requires the hiring of experts most times expatriate consultants. A good example in Nigeria is the type of railway system being presently operated that has been phased off many years ago in the advanced nations. This same principle is quite common to ICT.

Pathway to Establishing MIS in Nigerian Secondary Schools

To establish MIS in Nigerian secondary schools, this paper presents the following pathway.

1. Planning for MIS in the Secondary Schools

In the opinion of this paper, MIS and ICT are yet to be planned for in Nigeria. What currently passes as ICT and MIS are either programmes introduced by opportunists seeking for fame and glory or those who are actually passionate but do not understand what to do to pass the idea. However, if option 2 is the case, the introducers ought to know the right path to use to establish MIS in schools. Some questions that could lead to a formidable pathway include; first, is there an MIS policy or legislation for schools and colleges in Nigeria? Is it binding on any school, proprietor or government to provide it? If it is; what is the awareness level of the provider, beneficiary and other stakeholders? How do we treat matters that will arise in the process of implementation? The foregoing issues agitate the mindset of this research. On the issue of ICT and MIS, Nigeria appears to be towing the well known path of educational policy implementation failure again. In the recently introduced ICT to the secondary school curriculum, no preparation was made to supply ICT complaint teachers neither were text books provided. The planning appears to be done by a microcosm of unknown experts using government funds to attain personal objectives. The first external examination candidates of that process are being produced now. The researcher observes that hitherto, private schools in Nigeria have been running ICT programmes in their school systems but with external affiliations for example, some secondary schools are affiliated to Microsoft, others to NIIT and produce certified engineers at the secondary school levels full of skills and ebullience at conclusion of secondary school. It is the opinion of this paper, that proper planning for implementation commences. The planning must take cognizance of school location, infrastructure and funding.

2. Personnel and Maintenance

As already pointed out, personnel is a core issue to the success of any IT, ICT or MIS programme. The persons or people to man core aspects especially instructions and engineering aspects must be on ground. In a study by Emunemu, Oyekan and Isah (2012), it was observed that in-service training is now lacking among teachers. It was further observed that skills in ICT were far from Nigerian teachers especially teachers with over 15 years experience. Though ICT have been inculcated into the curriculum of colleges of education, its effectiveness is doubtful. On the other hand, the issue of MIS is more cumbersome than ICT. While ICT principally deals with hardware and software, MIS includes others as networking and several others hence the issue of MIS in Nigerian schools is far more than just IT and ICT. MIS for example must include the provision of websites, web portals for the assembling and dissemination of information. MIS could enable collaboration among schools as currently being experienced in tertiary education access in 'schools without borders' - online education. It becomes difficult to maintain many of these equipments at breakdown causing a delay in the utilization of expensive hardware. It is the opinion of this paper that the education providers begin a vigorous process of teacher re-education and re-orientation for the new MIS and ICT world. The 21st century is not for manual production as emphasis has shifted to mass production.

3. Developing a Flexible MIS/ICT Curriculum

The curriculum of the MIS and ICT should be made flexible especially as it concerns effectiveness. To avoid a situation of self deceit, it might be advisable to allow the private sector handle for government due to the corruption that has permeated all sections of public and civil service in

Nigeria. The curriculum definitely precedes implementation. While government should serve as a financier and regulator and the provider of the curriculum, the private sector should be allowed to partner with government in the provision of facilities and implementation. A core ingredient in the curriculum development includes book production and facilitation of learning experiences to assist skill development. Where books are absent, then the whole process becomes a sham. A flexible curriculum will allow for theoretical and practical instruction. These notwithstanding the practical aspect of the curriculum should allow community participation that will involve inviting skilled artisans and practitioners to the classrooms to facilitate the work of the teacher. Under such conditions, the community could volunteer the services of members of the community to collaborate with government for the provision of ICT.

4. Infrastructural Acquisition and Safety

It is well known that absence of critical infrastructure is a significant problem in Nigeria's educational system. The need for buildings to house computer equipment cannot be over emphasized. These must be plans that are synergized at all levels to ensure the safe housing and accommodation of all acquired hardware. This paper refers to all levels as inclusive of Federal, State, Local Government and the private sector. It will not be out of place for the private sector (community) to provide security in the environment especially when school is closed or on vacation. A core challenge today is the problem of electricity in Nigeria. The same method should be adopted to provide electricity and other critical infrastructure lacking in schools.

Summary

This paper examined possibilities of establishing MIS in Nigerian schools. The paper described the meaning and definition of MIS and distinguished properly between MIS, IT and ICT. Among the challenges facing the establishment of MIS are such as absence of legislation and policy, critical infrastructure especially electricity, cost of equipment, poor curriculum orientation and absence of specialized personnel in that area etc. A pathway proposed include the central and decentralized planning of MIS establishment in Nigerian schools that will involve all facet of society.

Conclusion

Premised on this study's findings if MIS is established in secondary schools, it will lay a solid foundation for social, political and economic development of Nigeria. Further to this, MIS at secondary school level will usher Nigeria into the committee of established nations in the nearest future. If MIS is successfully implemented in Nigerian secondary schools, a marked departure from previous failures in educational plan implantation would have been achieved.

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