

INFLUENCE OF THE USE OF EDUCATION MANAGEMENT INFORMATION SYSTEM (EMIS) ON MANAGEMENT OF SECONDARY SCHOOLS IN ANAMBRA STATE.

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Abstract

The study examined influence of the use of Education Management Information System (EMIS) on management of secondary schools in Anambra state. Three research questions and three null hypotheses guided the study. The study adopted descriptive survey design. The study was carried out in all the public secondary schools in Anambra State. The population of the study was 5604 which comprised 262 principals and 5342 teachers. The sample for the study was 200 respondents which comprised 10 principals and 190 teachers selected through purposive sampling technique. The instrument for data collection was the structured questionnaire titled; Influence of Education Management Information System in Secondary school Management Questionnaire (IEMISSMQ). Face validation was done by the experts. The computation for reliability was done using the Cronbach's Alpha Coefficient. Mean and standard deviation were used in answering the research questions while t-test was used to test the three null hypotheses at .05 level of significance. The findings of the study was that the use of the EMIS modules in curriculum and instruction, human resource and school-community relations influence the management of secondary schools in Anambra State positively since it reduced the time to do routine tasks such as preparation of exams and students' reports, students' attendance and staff appraisal and communicating with parents and other stakeholders. The study recommended that Ministry of Education should seek for more funding to enable secondary schools purchase more equipment and get technical support in line with the National Policy on Education among others.

Keyword: Influence, Education, Management, Information, System

Introduction

Secondary education being the bridge between the primary and tertiary education have the broad goals of preparing people for useful living in the society and for higher education and this has made it imperative that it should, among others, supply trained manpower in the applied science, technology and commerce at sub-professional levels; inspire its students with the desire for self-improvement and achievement of excellence; raise a generation of people

who can think for themselves, respect the views and feelings of others; and respect the dignity of labour (Federal Republic of Nigeria, 2004). One major step in the achievement of these goals is the enrolment of students into secondary schools where they are exposed to experiences necessary to achieve these objectives. The quality of experiences to which these students are exposed largely determine the quality of the output and the extent the goals of secondary education are achieved. At the secondary school level, quality education is absolutely necessary because it serves as the foundation for tertiary education and for people to provide self-employment if they cannot continue to the tertiary level. If that basic foundation is weak, it will lead to national catastrophe as progress in the society becomes very difficult. Education cannot be an instrument per excellence for achieving national development where secondary school education is not effectively and efficiently managed to accomplish its aim and objectives (Maki, 2010).

Educational management is conceived as being able to handle carefully and unwastefully what happens in the process of educating people so that everything works out according to plan (Babalola, 2006). He explains further that educational management goes along with the quest to put the school system under control, regulation or supervision in its attempts to effectively and efficiently organize available scarce resources through cooperative efforts when establishing institutions of learning, enrolling learners, attracting best staff, conducting teaching, learning, and research, as well as graduating learners at all levels of education. In doing these, it involves planning, organizing, directing, controlling, coordinating, staffing, and budgeting. According to him, a good educational manager will be one who works with staff and students with fewer complaints about failure rates, dropout rates, repetition rates, retention rates, absenteeism, wastages, sicknesses, strike actions, and unfinished work. The importance of educational management as an instrument par excellence for achieving growth, progress and national development cannot be over emphasized. Advanced nations of the world such as Britain, United States of America, Japan among others have attained a high level of social, economic, scientific and technological advancement through well planned and implemented educational systems. Educational management, according to Okumbe (2008), is the cardinal factor that determines the success or failure of educational plans. The effective management of educational institutions helps in the implementation of policies and programmes aimed at realizing envisaged educational targets. The importance of management of educational institutions cannot be over emphasized. According to Ogbonnaya (2009), it is with efficient management that an organization or institution can coordinate its activities to achieve predetermined goals. Thus, the task of educational managers is to establish the environment for group effort in such a way that individuals will contribute to group objectives with the least amount of such impact as money, time, effort, comfort and materials.

A secondary school principal is the manager and chief executive of the school and the key person in ensuring that the students receive quality school experiences by making efficient use of both human and material resources. The Principal is accountable to the Ministry of Education, Post Primary Schools Service Commission (PPSSC) and other relevant bodies, ensures the effective and efficient utilization of human and material resources towards the achievement of educational goals. The main tasks of the school principal are to interpret national policies, execute curriculum programs, committed to students, teachers and support staffs' welfare, equipping physical facilities and finances, inducting and retaining school community relations (Visscher, 2003). The management functions like planning, organizing, executing, monitoring, controlling and evaluation can be performed with the information. Information is the key in the management of secondary schools since the secondary school manager is required to submit quantum of information to the Ministry of Education, Post Primary Schools Service Commission, parents, teachers and the school community. To aid the

timely and accuracy of information for decision making to these relevant bodies the principal needs the assistance of Education Management Information System (EMIS). Apart from rendition of timely information to the stakeholders, school managers are considered to be the central forces in tapping the learning opportunities created by the introduction of ICTs. They hold the key to what and how teaching and learning take place at schools and in the communities (Mankilik & Agbo, 2006). Indeed, ICT holds out the opportunity to revolutionize teaching methods, expand access to quality education and improve the management of institutional system (WorldBank, 2002).

For the effective and efficient management of secondary school, the principal needs the assistance of education management information system (EMIS). The use of Education Management Information System (EMIS) in educational management has rapidly increased due to its efficiency and effectiveness as the world is now turning into a global village through information communication technology. School managers who used to spend large amount of time in solving complex allocation problems (e.g., staff allocation, resource allocation, timetabling) and monitoring the school operations have now better options due to enhanced technology. EMIS facilitate the decentralization of work tasks and their coordination in an interactive network of communication in real. They allow for greater flexibility and networking that emphasizes interdependence, interaction and constant adaptation to an ever-changing environment (Castells, 2001). Brunigess (2003) outlined some of the specific tasks in management where Management Information Systems (MIS) could be used including in curriculum instruction, human resource, finance and communicating with the school community.

The justification for using EMIS is further affirmed by Jhurree (2005) who argued that apart from classroom instruction, teachers are also involved in class administrative duties such as student record keeping, lesson planning, preparing hand-outs, preparing exam papers, marking and performing some statistical analysis which can be efficiently done using EMIS modules. Bruniges (2003) asserted that the purpose of using EMIS is to “improve and increase quality, accessibility and cost-efficiency of the delivery of education.” Haddad and Jurich (2002) contended that an EMIS could be used to do the following: assist school administration in the efficient management of official functions, enhanced supervision of student progress, improvement of school resources management; promotion of communication between school units, parents, and the school administration and in so doing cultivating responsibility on the part of school management, enhancing transparency in administrative actions, as well as the interlinking of school networks. In this study, the use of EMIS in management is broadly seen as a process of merging of technology used for communication, data processing and data storage in the daily tasks of the school’s management.

With respect to the use of EMIS in the management of curriculum and instruction , a study done in Australia by Gurr (2000) showed that the use of ICT by school managers lessened their workload and made the management process to be more effective, helped use time more efficiently and increased the quality of in-school communication. This in turn led to enhanced supervision of student progress as well as the improvement of school resources management. A similar finding on the use of EMIS to address teacher workloads in the United Kingdom noted that EMIS can have a significant role to play in improving institutional effectiveness due to its ability to reduce routine administration, improve the effectiveness of support staff, facilitate the transfer of some tasks from teachers to support staff and enable teachers to more effectively plan and deliver teaching and learning (PriceWaterhouseCoopers, 2004). The Report pointed out however that the reduction of workload is only possible if factors such as the confidence of the users is taken into account.

With respect to human resource, the use of EMIS can have a positive influence as evidenced in an Indian study which showed that EMIS could be employed in human resource management by way of biometric attendance system. This would solve the problem of absenteeism by teachers and students thus bringing in more accountability and discipline (Hooda & Malik, 2012). Computerization of student attendance can help identify students who are not attending school thus assist the school management to take appropriate measures such as informing the parents. The use of EMIS in human resource can also help in reducing clerical time required to check presence or absence and also enable attendance data to be entered in report forms.

Althobeti (2013) asserted that EMIS can play a role in increasing transparency and accountability in budgeting and financial management, revenue mobilization and expenditure in learning institutions. Blandford (1997) pointed out that the computerization of accounts system could help in maintaining the records accurately, systematically and timeously. Blandford further stated that such systems can help track money owed to the school, generate receipts for all money collected, authorize valid payments; provide accurate, up-to date financial information on budget commitment and actual expenditure and produce financial statements and other statements needed by schools to meet their statutory obligations.

Odhiambo (2017) investigated the influence of the use of Education Management Information System (EMIS) on the management of secondary schools in Nairobi City County. The study employed the descriptive research design. The population was 1980 which comprised of 220 principals, 220 deputy principals and 1540 heads of department. The sample size was 259, selected through simple random, stratified and purposive sampling techniques. Frequencies, percentages, means and standard deviation and t-test, chi-square test and Cramer's V were used. The findings showed that the use of EMIS module for curriculum and instruction, human resource, school-community relations and finance influenced positively the management of secondary schools as it reduced the time to do routine tasks thus freeing up time for other school engagements by management.

A study conducted in Uganda and Botswana by Kereteletse, Selwood and Visscher (2008) on the use of information technology in education management found out that though the use of information systems was still at an early stage in both countries, positive effects were reported in the use of technology in the management of personnel records of teachers in Botswana and thus cases of 'missing' files was minimized.

Another study done in Israel by Telem and Pinto (2006) on the influence of information technology on the management of school-community relations (the interrelations between parents and school and parents and their children in terms of their learning, behaviour and attendance (LBA), it was found that school management information system introduction resulted in noticeable changes in the interactions between parents and school and between parents and their children. The changes in form of qualitative information regularly and automatically provided to parents resulted in changes in the nature and frequency of parents and school functionaries dealing with LBA issues as well as in the LBA interaction between the latter and between parents and their children.

A similar study in Union City School District, an impoverished district in the USA by Haddad and Jurich (2002), showed that school-community relations was affected when computers were installed in schools and homes of teachers and parents in a pilot project on ICT in education leading to improved messaging within stakeholders such as schools, parents, central decision makers and businesses thus fostering accountability, public support and connectivity.

The study will determine influence of the use of Educational Management Information System (EMIS) on management of secondary schools in Anambra State

Statement of the Problem

The major advantages of the use of EMIS in terms of efficiency and effectiveness have led to wider utilization of the technology for the management of school operations. In Anambra, the government has come up with policies that advocate for the use of EMIS in education in general and school management in particular. Although many schools in Anambra State were provided with the required ICT facilities over the years during the tenure of Mr. Peter Obi as the governor of Anambra State, there is a growing outcry from the stakeholders that EMIS modules are not being implemented in the schools. Most secondary schools in Anambra State are still using the traditional paper based documentation system which slows down the method of processing of documents, filling system in keeping records, and delay processing of documents in and out of the schools. There are the problems of poor approaches by the educational managers in using EMIS in scheduling courses/subjects, space, installation, inventory and personnel control, recording and reporting attendance, school accounting, storage, interpersonal relationships and retrieval of student information marks management. There is also incapability of using EMIS in generating the demographic data of students and institutions staff, production of results online, retrieving on lecture timetable online and enlisting of courses and registration through online. EMIS module that is meant to assist the schools deliver quality instructions to students at the comfort of their homes if the schools have subscribe to an internet service provider during challenging time like COVID'19 lockdown are not effectively being used. Most students still loiter about missing the lessons looking for the bank to pay their schools which their parents could have paid at their convenient if the EMIS packages are utilized fully. EMIS module is meant to straighten the school community relations because the school manager can always place crucial information regarding the school on their website for the knowledge of every member of the community. Resolutions of PTA meetings and students assessments can as well be posted on real time to the parents. The investments on EMIS can only be considered worthwhile if there is evidence that they have made a positive impact on school management. There was therefore a need to determine the influence of the use of EMIS on management of secondary schools in Anambra State.

Purpose of the Study

The purpose of the study was to determine the influence of the use of EMIS on management of secondary schools in Anambra State. Specifically the study sought to:

- i. Determine the influence of the use of EMIS module for curriculum and instruction on the management of secondary schools in Anambra State.
- ii. Ascertain the influence of the use of EMIS module for human resource on the management of secondary schools in in Anambra State.
- iii. Find out the influence of the use of EMIS module for school-community relations on the management of secondary schools in Anambra State.

Research Questions

The study was guided by the following research questions:

1. What is the influence of the use of EMIS module for curriculum and instruction on the management of secondary schools in Anambra State?
2. What is the influence of the use of EMIS module for human resources on the management of secondary schools in Anambra State?
3. What is the influence of the use of EMIS module for school-community relations on management of secondary schools in Anambra State?

Hypotheses

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

1. There is no significant difference between the mean ratings of principals and teachers on the influence of the use of EMIS module for curriculum and instruction in the management of secondary schools in Anambra State.
2. There is no significant difference between the mean ratings of principals and teachers on the influence of the use of EMIS module for human resources in the management of secondary schools in Anambra State.
3. There is no significant difference between the mean ratings of principals and teachers on the influence of the use of EMIS module for school-community relations in the management of secondary schools in Anambra State

Method

The research study was done using a descriptive survey design. According to Creswell and Clark (2007), such a design enables data to be collected from a wide area quite cheaply and produces valid and reliable generalization.

The study was carried out in all the 262 public secondary schools in Anambra State. The population of the study was 5604 which comprised 262 principals and 5342 teachers.

The sample for this study was 200 respondents of the study population consisted of 75 male teachers and 125 female teachers selected through stratified random sampling technique. The instrument for data collection was the structured questionnaire titled; Influence of Education Management Information System in Secondary school Management Questionnaire (IEMISSMQ).

Face validation was adopted. This was done by giving the draft of questionnaire items to three experts who are lecturers in the Department of Educational Foundations (two from Educational Management and one in Measurement and Evaluation) Chukwuemeka Odumegwu Ojukwu University Anambra State for scrutiny.

The computation for reliability was done using the Cronbach's Alpha Coefficient. The reliability coefficient yielded .75 which was considered good for the study.

Mean and standard deviation were used in answering the research questions while t-test was used to test the three null hypotheses at .05 level of significance.

Results

Research Question 1: What is the influence of the use of EMIS module for curriculum and instruction on the management of secondary schools in Anambra State?

Table 1: Mean Ratings and Standard Deviation on the influence of the use of EMIS module for curriculum and instruction on the management of secondary schools in Anambra State

Item description	Male Teachers				Female Teachers			
	N	$\bar{X}$	Sd	Remark	N	$\bar{X}$	Sd	Remark
1. School timetable	75	4.00	.21	P	125	3.61	.68	P
2. Student progress report	75	3.12	.75	P	125	3.58	.66	P
3. Co-curricular activities	75	4.00	.21	P	125	3.69	.56	P
4. Teachers' schemes of work	75	3.33	.58	P	125	3.56	.65	P
Total		14.45	1.75		190	14.44	2.55	

Data presented in Table 1 above showed the mean ratings of male and female teachers on the influence of the use of EMIS module for curriculum and instruction on the management of secondary schools in Anambra State. The data indicated that the mean ratings of male teachers for items 1 to 4 are: 4.00, 3.12, 4.00 and 3.33 with corresponding standard deviations of .21, .75, .21 and .58. The female teachers rated these four items thus: 3.61, 3.58, 3.69 and 3.56 with corresponding standard deviations of .68, .66, .56 and .65. Based on the mean cut-off point of 2.50 both the male and female teachers rated 1 to 4 high extent indicating that EMIS has positive influence in the area of curriculum and instructional management.

Research Question 2: What is the influence of the use of EMIS module for human resources on the management of secondary schools in Anambra State?

Table 2: Mean Ratings and Standard Deviation on the influence of the use of EMIS module for human resources on the management of secondary schools in Anambra State.

Item description	Male Teachers				Female Teachers			
	N	$\bar{X}$	Sd	Remark	N	$\bar{X}$	Sd	Remark
5. Attendance taking	75	3.55	1.06	P	125	3.43	1.09	P
6. Student discipline	75	3.39	1.09		125	3.48	1.01	P
7. Guidance and counselling	75	3.60	1.02	P	125	3.61	1.17	P
8. Reporting to various agencies e.g Ministry of Education, PPSC, Teachers Service Commission and sponsors	75	3.62	1.00	P	125	3.56	.65	P
9. Memos to staff	75	2.92	.77	P	125	3.08	.76	P
10. Staff information records	75	3.58	.66	P	125	3.11	.62	P
11. Staff appraisal	75	3.50	.69	P	125	3.44	.60	P
Total		24.16	6.29			23.71	5.90	

Data presented on Table 2 above showed the mean ratings of male and female teachers on the influence of the use of EMIS module for human resources on the management of secondary schools in Anambra State. The data indicated that the mean ratings of male teachers for items 5 to 11 are: 3.55, 3.39, 3.60, 3.62, 2.92, 3.58 and 3.50 with corresponding standard deviations of 1.06, 1.09, 1.02, 1.00, .77, .66 and .69. The female teachers rated these four items thus: 3.43, 3.48, 3.61, 3.56, 3.08, 3.11 and 3.44 with corresponding standard deviations of 1.09, 1.01, 1.17, .65, .76, .62 and .60. Based on the mean cut-off point of 2.50 both the male and female teachers rated 1 to 4 high extent indicating that EMIS has positive influence on human resources management of secondary schools in Anambra State.

Research Question 3: What is the influence of the use of EMIS module for school-community relations on management of secondary schools in Anambra State?

Table 3: Mean Ratings and Standard Deviation on the influence of the use of EMIS module for school-community relations on the management of secondary schools in Anambra State.

Item description	Male Teachers				Female Teachers			
	N	$\bar{X}$	Sd	Remark	N	$\bar{X}$	Sd	Remark
12. Managing community support for school	75	3.50	1.11	P	125	3.52	1.14	P
13. Invitation to meetings	75	3.74	.99	P	125	3.62	1.00	P
14. Communication of term dates/special dates	75	3.49	.81	P	125	3.53	.88	P
Total		10.73	2.91			10.67	3.02	

Data presented on Table 3 above showed the mean ratings of male and female teachers on the influence of the use of EMIS module for curriculum and instruction on the management of secondary schools in Anambra State. The data indicated that the mean ratings of male teachers for items 12 to 14 are: 3.50, 3.74 and 3.49 with corresponding standard deviations of 1.11, .99 and .81. The female teachers rated these four items thus: 3.52, 3.62 and 3.53 with corresponding standard deviations of 1.14, 1.00 and .88. Based on the mean cut-off point of 2.50 both the male and female teachers rated 12 to 14 high extent indicating that EMIS has positive influence on the school-community relationship management of secondary schools in Anambra state.

Testing the Hypotheses

Hypothesis One: There is no significant difference between the mean ratings of male and female teachers on the influence of the use of EMIS module for curriculum and instruction in the management of secondary schools in Anambra State.

Table 4: Summary of t-test for Hypothesis One

Subject	N	$\bar{X}$	Sd	Df	LS	Cal.t	Crit.t	Decision
Male teachers	75	14.45	1.75	198	.05	.046	1.96	NS
Female teachers	125	14.44	2.55					

*Not Significant

Table 4 above presents the independent t-test analysis of the mean difference in the response opinions of male and female teachers on the influence of the use of EMIS module for curriculum and instruction in the management of secondary schools in Anambra State. Looking at the table, the calculated t-value is .046 at 198 degree of freedom and .05 level of significance. Since the calculated t-value of .046 is less than the critical table value of 1.96, there is no significant difference between the opinions of male and female teachers on the influence of the use of EMIS module for curriculum and instruction in the management of secondary schools in Anambra State.

Hypothesis 2: There is no significant difference between the mean ratings of principals and teachers on the influence of the use of EMIS module for human resources in the management of secondary schools in Anambra State.

Table 5: Summary of z – test for Hypothesis two

Subject	N	X	Sd	Df	LS	Cal.t	Crit.t	Decision
Male teachers	75	24.16	6.29	198	.05	.735	1.96	NS
female teachers	125	23.71	5.90					

*Not Significant

Table 5 above presents the independent t-test analysis of the mean difference in the response opinions of male and female teachers on the influence of the use of EMIS module for human resources in the management of secondary schools in Anambra State. Looking at the table, the calculated t-value is .735 at 198 degree of freedom and .05 level of significance. Since the calculated t-value of .735 is less than the critical table value of 1.96, there is no significant difference between the opinions of male and female teachers on the influence of the use of EMIS module for human resources in the management of secondary schools in Anambra State.

Hypothesis 3: There is no significant difference between the mean ratings of principals and teachers on the influence of the use of EMIS module for school-community relations in the management of secondary schools in Anambra State.

Table 6: Summary of t–test for Hypothesis three

Subject	N	X	Sd	Df	LS	Cal.t	Crit.t	Decision
Male teachers	10	10.73	2.91	198	.05	.201	1.96	NS
Female teachers	190	10.67	3.02					

*Not Significant

Table 6 above presents the independent t-test analysis of the mean difference in the response opinions of male and female teachers on the influence of the use of EMIS module for human resources in the management of secondary schools in Anambra State. Looking at the table, the calculated t-value is .201 at 198 degree of freedom and .05 level of significance. Since the calculated t-value of .210 is less than the critical table value of 1.96, there is no significant difference between the opinions of male and female teachers on the influence of the use of

EMIS module for school-community relations in the management of secondary schools in Anambra State.

Discussion of Findings

The results presented in Tables 1 and 4 indicated that there was positive influence of the use of EMIS module on curriculum and instruction by principals. Both male and female teachers opined that the use of EMIS drastically reduced the time for preparing timetables at the beginning of the term thus enabling them to use the time saved for other duties; on students' progress reports, the monitoring of students' progress was made easier thus enabling a positive impact to be realized in school management. The use of EMIS module for tests/exams by the teachers had a positive influence on school management because various deadlines imposed for administration of tests/exams and processing students' results were easily met thus saving on time and workload. However the use of EMIS for lessons/schemes of work and researching for digital resources was also rated as having positive influence on school management. The finding conform to that of Telem (2001) who found that the use of EMIS resulted in instructional evaluation by principals to be more organized and tighter because student achievement could be compared among various teachers on an ongoing basis and the principal could be in a better position to evaluate their teaching and grading.

The results presented in Tables 2 and 5 indicated that the use of EMIS module has positive influence on human resource management of secondary schools in Anambra State. The male and female teachers indicated that tasks such as registration of students for WASSCE was now less hectic; invitations to meetings and communication; attendance taking, guidance and counselling and discipline; all rated positive influence which indicated that there was no significant difference in the mean ratings of the male and female teachers on the influence of the use of EMIS module for human resources in the management of secondary schools in Anambra State. The findings of the study is in tandem with that of Telem and Pinto (2006) who found that the School Management Information System (SMIS) provided a quicker information flow to assist in decision making with regard to both students and teachers.

The use of EMIS module for community support for the school by the secondary school management as presented in Tables 3 and 6 indicated no significant difference. This means that the usage of new media such as websites to engage with the wider community; invitation to meetings and communication of term dates/special dates; and Bulk SMS and WhatsApp applications that enabled them to quickly communicate urgent information to a large number of parents instead of individually calling them or writing letters have positive influence on the secondary school management in Anambra State. The findings of this study is in line with that of Haddad and Jurich (2002) who found that school-community relations was affected when computers were installed in schools and homes of teachers and parents in a pilot project on ICT in education leading to improved messaging within stakeholders such as schools, parents, central decision makers and businesses thus fostering accountability, public support and connectivity.

Conclusion

Based on the findings of the study, it was concluded that the use of the EMIS modules in curriculum and instruction, human resource and school-community relations influenced positively on the management of secondary schools in Anambra State as it reduced the time to

do routine tasks such as preparation of exams and students' reports, students' attendance, staff appraisal and communication with parents and other stakeholders.

Recommendations

Based on the findings and conclusion of the study, the following recommendations are made:

1. The Ministry of Education should seek for more funding to enable secondary schools buy more ICT equipment and get technical support in line with the National Policy on Education.
2. The Post Primary School Service Commission (PPSSC) should institute ICT policies that will enable all managers (principals) and other staff to access and use ICT facilities to enhance their tasks.
3. There is need for continuous and structured in-service professional development for the managers and teachers on the EMIS packages which enhance their school management.
4. The Ministry of Education should have an Information Technology base where all the all the secondary schools will be connected to transmit all their information and data via online for easy access and quick decision making by the managers.

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