

## AN APPRAISAL OF THE USE OF EDUCATION MANAGEMENT INFORMATION SYSTEM (EMIS) AND ITS EFFECTS IN THE EFFECTIVE MANAGEMENT OF SECONDARY SCHOOLS IN THE WEST REGION OF CAMEROON

**Wemba Valery**

Ph.D Student in Educational Management

The University of Yaoundé 1

Email: wemba@nfonap.com

Tel: 675550570

### ABSTRACT

This study entitled An Appraisal of the Use of Education Management Information System (EMIS) and its Effects in the Effective Management of Secondary Schools in the West Region of Cameroon, was conducted with the aim of examining the extent to which the use of EMIS affects planning of the school processes; determining the effects of Principals' integration of ICT facilities in EMIS on the effective management of their schools; and to finding out strategies for improving the effectiveness of secondary school management vis-à-vis the use of EMIS. From a population of 479 school Principals, 378 were selected from the various division and schools as a sample using the stratified, convenient and purposeful sampling techniques respectively. The instruments used for data collection included an observation guide, an interview guide and a semi-structured self-constructed questionnaire with items mostly identified from literature. A mixed method in collecting data was used. That is, self-delivery, the use of research assistants and social media services (WhatsApp and email). Both descriptive and inferential statistics were used in analysing the data collected. Specifically, the Spearman's rho Correlation was used. Findings revealed that: there is a significant relationship between the use of EMIS and planning of school processes for effective management (0.021); the integration of ICT facilities in EMIS significantly enhances effective school management( $p=0.001$ ); and that the provision of information management expert to develop a situational MIS for each school and the provision of ICT tools to each school by government could help to improve upon effectiveness of secondary school as concerns information management. Based on the above findings it was recommended amongst others that the government should train and provide experts in information management to design MIS for each school and that heads of schools should individually go for professional development especially in the domains of educational management and ICT.

**KEYWORDS:** EMIS, Planning, ICT, Effective Management, Secondary School, Cameroon

### BACKGROUND AND PROBLEM

Education can be formal, informal or non-formal. The formal education takes place in specific institutions called schools. In Cameroon, formal education is organised into primary, secondary and higher education (Tambo, 2012) with different curricula as per the ages and mental ability of the learners concerned. Cameroon is a Central African nation on the Gulf of Guinea. After World War I,

the French took over 80% of the area, and the British 20%. But after World War II, self-government was granted, and in 1972, a unitary republic was formed out of East and West Cameroon. Two separate systems of education have been in used in Cameroon before and after independence: East Cameroon's system was based on the French model, West Cameroon's on the British model. Thus, Cameroon is one of the countries that has two educational systems operating simultaneously: one based on its British/Anglophone colonial past and the other on its French/Francophone colonial past. Consequently, English and French are the official languages of instruction in the Cameroon education system. Generally speaking, the Cameroon educational system has three main levels: primary, secondary and tertiary. These are placed under MINEDUB, MINESEC and MINESUP respectively.

Farah (2013) postulates that education institutions require management to plan, organize, direct, control and evaluate day to day activities to accomplish education goals through coordination education personnel and allocated budgets. School management is a process of making use of human and non-human resources to achieve school goals (Onifade, 2004). It involves planning, controlling, organizing, staffing, leading, coordinating and directing the available resources (Adeleke, 2001). Aghenta (2001) sees school management as a process involving organizing, planning, leading, measuring and controlling as well as undertaking of risk and handling of uncertainty in matters concerning the school.

Management in school entails working with and through teachers, non-teaching staff and pupils or students to get things done effectively (Allen, 2015). School management has its attention primarily on the school. It is more concerned with the institution, its goals, policies and execution of these policies. In school management, the primary aim has to do with the improvement of teaching and learning, and all the activities of the school (Allen, 2015). Thus, management is necessary in school to co-ordinate the various activities of the units for goal achievement (Allen, 2015). The tag used to describe this field of study has altered over time from educational administration to educational management and finally to educational leadership. Effective school management involves ensuring efficiency and effectiveness in the use of the available human and physical resources together with the ability to combat any constraints that might hamper the achievement of the objectives (Adeyemi, 2009). Effective school management to him is the ability of the school head to excel in aspects such as planning, supervision, leadership, communication, disciplinary ability, monitoring, motivation and delegation of duties. Tabir (2004, cited in Adeyemi, 2009) argued that effective head teachers should be provided with basic monitoring and evaluation, tools for effective supervision of school activities. This has to do with the keeping track (records) of past events.

According to the Bayo (2013), there are several aspects of school planning including; administrative planning, academic or curricular planning, co-curricular planning, instructional planning, and institutional planning. Planning is regarded as the most basic of all the management functions. It involves the selecting from among alternative future course of action for the organization as a whole

and every department or section within it. Planning according to UNDP (2009), can be defined as the process of setting goals, developing strategies, outlining the implementation arrangements and allocating resources to achieve those goals. To Ololube (2013), planning is the process of determining a scheme for accomplishing a purpose. Such a scheme of arrangement is to be made beforehand by preparing a purposeful method of achieving the desired objectives. Educational planning in its broadest generic sense according to Ololube (2013), is the application of rational, systematic analysis to the process of educational development with the aim of making education more effective and efficient in responding to the needs and goals of its students and society.

Therefore, the purpose of planning is simply to ensure that the educational industry is effective in its activities. In other words, planning is futuristic. The rationale for planning is to effectively utilize available resources to attain a predetermined objective. The process involves strategies for manipulating several variables at the time of planning and their projection into the future. Planning is the formal process of making decisions for the future of individuals and organizations. Planning involves dealing on aims and objectives, selecting to correct strategies and program to achieve the aims, determining and allocating the resources required and ensuring that plans are communicated to all concerned. The output of the planning process is the plan itself, which is a blueprint for action.

While all educational managers need information during planning and other processes, they do not all need the same type of information. Fullan (2001) suggests that there are five basic sources of information that schools can use to evaluate their teaching, that is: by teachers self-monitoring themselves as they teach, teachers audio taping or videotaping themselves, teachers getting information from students about the lesson by use of questionnaires. Information consists of data being processed and made meaningful to the users. The relationship between data and information is similar to that of raw materials and the finished product. Information will be meaningful insofar as it provides useful raw material for taking a specific decision (Lapiedra & Devece, 2012). So, information is the recipient's knowledge and comprehension of data. The kind of information required or kept will depend on a range of factors: their level in the hierarchy, the work they are carrying out, confidentiality, urgency, etc (Lapiedra & Devece, 2012).

According to Ibara (2010), record keeping otherwise known as storage of information is important in the functions of both the administration and teaching staff of a school. The World Bank (2000) asserts that record is a document regardless of form or medium created, received, maintained, and used by an organization (public or private) or an individual in pursuance of legal obligations or in the transaction of business, of which it forms a part or provides evidence. Records are the documented information generated, collected or received in the initiation, conduct or completion of an activity and that comprises sufficient content, context and structure to provide proof or evidence of the activity (Adebowale & Osuji, 2008). Thus, one can safely say that school records are written statements of information (facts, events, etc) about a school's life. Records and record keeping constitute the arteries that supply life-sustaining blood to the system and sub-systems of organizations and institutions. School records according to Olagboye (2004) are books, documents,

diskettes and files in which are embodied information on what goes on in school (e.g. social, academic and non-academic activities, important events etc), the school plant as well as other relevant information focusing on the growth and development of the school.

The purpose of a school's information system is to gather the information it needs and, following necessary transformations, ensure that it reaches the members of the school community who require it, whether for decision making, strategic control, or for implementing decisions adopted by the school (Menguzzato and Renau, as cited in Lapiedra & Devece, 2012).

Thus, a manager's performance therefore depends on his or her skills in exploiting the information system's capacities in order to obtain positive business outcomes (Kumsa, 2014). In tandem with the constant increase in computing power, more and more powerful software, almost-ubiquitous connectivity via wifi and mobile devices, and ever-expanding networking that evolved into the internet, work that previously took many hours - like tabulating a company's shipping costs over a year or population increases in a state over a century - now takes little time or human effort. This makes the management of information easier.

Management information systems is a changing and challenging field. Education Management Information System(EMIS) can be defined as a system used to collect, integrate, process, maintain and disseminate integrated set of relevant, reliable, unambiguous and timely data and Information to education leaders, decisions makers, planners and managers at all levels to perform their responsibilities to achieve the goals and objectives of education (Bhatti & Adnan, 2010). EMIS refers to 'a system for the collection, integration, processing, maintenance and dissemination of data and information to support decision-making, policy-analysis and formulation, planning, monitoring and management at all levels of an education system (UNESCO, 2008). It is a system of people, technology, models, methods, processes, procedures, rules and regulations that function together to provide education leaders, decision-makers and managers at all levels with a comprehensive, integrated set of relevant, reliable, unambiguous and timely data and information to support them in completion of their responsibilities' (UNESCO, 2008).

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An EMIS according to Villanueva (2003), is an organized group of information and documentation services that collects, stores processes analyzes and disseminates information for educational planning and management. It is an education database that aims at ensuring timely, accurate and appropriate education data and information are available for decision making. It is a collection of component parts that include inputs, processes, outputs and feed backs that are integrated to achieve a specific objective. It is a system for managing a large body of data and information that can be readily retrieved, processed, analyzed, and made available for use and dissemination. It is a tool that uses systems theory, together with developments in computerization, to create a comprehensive approach to the collection and use of vast quantities of information on the education and training system (Villanueva, 2003)

EMIS is a global concept for educational management that encompasses the application of modern information and communication technology in collection, collation, storage and analysis of education data. In a very simple and straightforward way it may be understood as "An Information System for Managers of the Education System". Specifically, it is designed for use by planners and administrators to plan and administer education system more efficiently and effectively (ESDP, 2004). EMIS also includes a set of formalized and integrated operational processes, procedures, and cooperative agreements by which data and information about schools; educational resources and infrastructure; other learning activities, and evaluative outputs are regularly shared, integrated, analyzed, and disseminated for educational decision making at each level of the educational hierarchy. It is an institutional culture that perpetually advocates data and information use and seeks to ensure it through the creation of an environment which permits information systems to flourish (requiring institutional and organizational commitments), while creating and sustaining demand for information products (ESDP, 2004). It is an integrated human and computer-based process for providing all the information needed to support all the activities of the education department including monitoring and evaluation, planning and decision making.

The EMIS operates essentially as a subsystem within the general country arrangements and organization for educational policy, planning and management. By establishing and maintaining a systematic inter-sectoral exchange and flow of information, an EMIS links the Ministry of Secondary Education to other Ministries, agencies and institutions in education and other sectors that are also engaged in educational activities. An EMIS aims to coordinate information resources such as the education statistics unit the education information and documentation services, and units and departments holding various administrative records for education. The aim is to integrate the various sources of educational management information into one coordinated system to serve the entire country. In this way, the combined information resources of the EMIS are at the service of the entire community.

The main purpose of an EMIS according to Villanueva (2003), is to integrate information related to the management of educational activities, and to make it available in comprehensive yet succinct ways to a variety of users. These include teachers, principals, curriculum planners, inspectorate officials, financial controllers, planners, policy advisers and political leaders, as well as parents and students. The overall concept of an EMIS has given to the following objectives (ESDP, 2004; Van, 2006; UNESCO, 2008; Bhatti & Adnan, 2010):

- a. To improve capacities in data processing, storage, analysis and supply of educational management information so that education planners and administrators can avail themselves of reliable and timely data
- b. To co-ordinate and further improve dispersed efforts in the acquisition, processing, storage, transmission, analysis, repackaging, dissemination and use of educational management information
- c. To facilitate and promote the use of relevant information by various agencies and individuals at all levels for more effective educational planning implementation and management
- d. To streamline the flow of information for decision-making by reducing and eliminating duplications as well as filling information gaps
- e. To provide information for policy dialogue and scenarios for development of the education system.

Today, most of the education institutions are looking for an optimum distribution of resources and services to yield maximum benefits to students, teachers, and the management alike. In this world of ballooning educational demands, Management Information System is just what these institutions need to propel their progress in the right direction and education management information system (EMIS) lies at the very heart of efforts to monitor progress towards the world's education goals, particularly Sustainable Development Goal 4 (SDG 4) (Balram, 2018). It is a vital instrument that has, perhaps, had less attention than it deserves, given that an EMIS should be, in essence, in the core of the planning and policy implementation processes in a country's education 'machine' (Balram, 2018).

However, the introduction of ICT in the education management information system requires careful planning. Thus, information and communication technology is probably the key to the increased reliance and use of management information systems. In this information age, an uninformed or imprecise school head is as good as dead. To be able to capture, store, retrieve and use information speedily and appropriately for school effectiveness and efficiency, every school requires an effective Management Information System (MIS). The MIS should be both manual and computer-based with the long-term learning towards computer-based MIS operations. Information and Communication Technology is increasingly allowing schools and school systems greater access to timely, relevant and detailed information on many of the functions of schools. Computerization will undoubtedly facilitate the retrieval of personnel information. At the same time, unless there is a very well-

developed capacity to manage electronic records as legally verifiable evidence of entitlements, contractual obligations, policies, or transactions for the period required, a mixed media, paper/electronic, human resource information system is essential (World Bank, 2000).

The increasing use of modern technologies in education has revolutionized the educational enterprise. The application of technology in education has been given many names such as instructional technology, assistive technology, information and communication technology, e-learning, e-teaching, distance education and e-administration (Molindo as cited in Ligondo, 2019). All these names have a goal to improve the quality of teaching, learning and administration process in schools (Ligondo, 2019). Information and communication technologies (ICTs) are simply technologies arising from scientific and technological progress in computer sciences, electronics and telecommunications. They enable us to process, store, retrieve and disseminate valuable information in text, sound and video form. In the emerging knowledge society of our age, educating individuals to be capable of gathering and using information fast and effectively has become a priority for educational institutions. That is why the integration of available technologies into educational processes and the effective use of technological resources has gained importance (Cevat & Tijen, 2014). The benefits of technologies in education are many and varied to all educational stakeholders. In Africa, the Economic Commission for Africa has indicated that the ability to access and use information is no longer a luxury but a necessity for development. The twenty first century school administrator faces numerous challenges emanating from ICT use. This arises from the fact that many developing countries in Africa are still slow in ICT integration (Ligondo, 2019). Attitude issues as well as lack of ICT competence also affect ICT integration in school. African countries have only recently begun to show the micro economic stability needed for education development and therefore the need to integrate ICTs in education administration is real more than ever before (Ligondo, 2019). ICT Integration provides facilities and possibilities for the education administrators to perform their tasks. In this regard, ICT integration can be realized in student administration for example students' records to various resource administrations in an education system.

The last fifty-two years since the independence of Cameroon have seen an increasing international interest in leadership development courses and programmes for school leaders (Ebot-Ashu & Bisschoff, 2015). In Cameroon today, there is an increasing public fear and complaints that the administrative effectiveness of the principals is jeopardizing. Thus, this need be proved beyond public speculations through empirical studies. The falling standard of education over the years may not be unconnected with the influence of increase enrolment on the students' academic performance which is the parameters to measure principals' administrative effectiveness (Muraina, 2014). With the complexity of secondary schools in the urban and rural areas in terms of enrolment, individual differences, infrastructural and financial difficulties, the school head is bestowed a heavy task of management. In the day-to-day administration of their schools, heads of schools face myriad administrative problems which militate against the effective running of their schools. Education law demands that every educational institution should keep proper records of this day-to-day running and

other events that occur in the school (Owo, 2014). Such records are expected to be readily available and durable. Unfortunately, secondary school heads are still seen carrying physical files and records from schools through divisional and regional delegations to the ministry of secondary education. This renders the management information and records in secondary schools less effective.

Despite the importance of school records in the achievement of educational objectives, these records do not seem to be adequately managed by school heads. This low priority attention to records management often manifest on the area of missing files and records, falsification of records (eg. change of declaration of age), missing school plan and destruction of records to cover up something. This indicates ineffectiveness in school management and has created controversies between school proprietors/managers and school administrators on issues concerning the school finance, property and information which cannot easily be assessed due to lack of proper record keeping. Sometimes it is between the school authorities and parents as well as the public on the progress of their children (Oluwole & Dondo, 2015). This is because, whenever they want to have a look at their students' academic performance in the school, records are not properly there to show. Some records are provided to parents with numerous mistakes, if not incomplete. Could these lapses in the management of school information be responsible for the ineffectiveness of school principals in the management of their schools?

Despite the success registered in the use of information technology in other sectors of economy, educational institutions have lagged in the integration of computers for school management purpose (Webber, 2003). There is therefore, need for a shift or change in the record keeping practices in our secondary schools. Yet, a critical examination shows that computers are used less in schools in Cameroon (Kongnyuy, 2015). Unfortunately, reports of inspectors of education and chief supervisors often indicate that there may be weakness and inefficiencies in the record keeping practices of school heads and teachers (Owo, 2014). These lead to wasteful management of schools in terms of both time and resources which can also engender the non-attainment of educational objectives. The problem of this study is therefore that of ineffective school management characterised by poor planning, inability to accomplish laid down plans, non-objective evaluation of teachers and students, lapses in the follow-up of students, inadequacy in monitoring and guiding school processes and personnel.

Njilah (2006), noticed in dismay that when principals are appointed or transferred to new schools, they find themselves confused in planning for future activities, taking decisions or actions and in monitoring the students. Some take a lot of time to gather information and to adapt to the functioning of the school. This has equally led to insufficient monitoring of students and teachers, poor accountability and inadequate instructional supervision and poor time management. Equally, little or no records were kept by school heads when he could not trace a copy of his birth certificate duly deposited in the school four years earlier under the administration of a different school head. After misplacement of report cards by children, parents reportedly were unable to have a duplicate from



the school authorities. This was clear evidence that school documents and records were either poorly kept or not kept at all. Could this poor record keeping be responsible for the inconsistencies and poor planning, inadequate evaluation and evaluation and decision-making in secondary schools as supported by Gama (2010) who upholds that if records are not well managed, the school management function suffers? It was against this backdrop that the researcher sought to unveil the current record keeping and management practices of principals and the effects it carries on their effectiveness in managing their schools? It is in the light of the above that the researcher deems it fit to examine the relationship between principals' managerial skills in managing school information and their administrative effectiveness.

## **Objectives of the Study**

The main objective of this study was to appraise the effectiveness of a modern EMIS in the management of secondary schools in the West Region of Cameroon. Specifically, the study sought to:

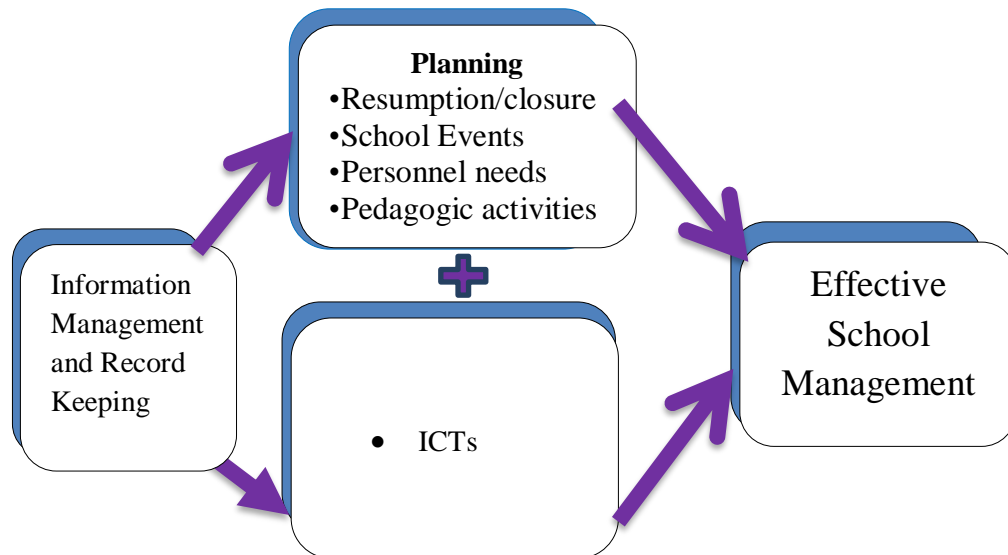
1. Examine the extent to which the use of EMIS affects the planning of school processes.
2. Determine the effect of principals' integration of ICT facilities in EMIS on the effective management of their schools.
3. Find out strategies for improving the effectiveness of secondary school management vis-à-vis the use of EMIS.

## **Hypotheses**

**Ho1:** There is no significant relationship between the use of EMIS and the planning of school processes for effective management.

**Ho2:** The integration of ICT facilities in EMIS does not significantly enhance effective school management.

**Conceptual and Theoretical Background**



*Figure 1: Relationship between Modern Record Keeping and effectiveness of school heads*

Source: Researcher’ Conception (2019)

The use of EMIS with the integration of ICTs eventually leads to effectiveness of the school management especially in terms of decision making, accountability and handing over. This link is theoretically founded in a plethora of theories of management. Gulick (1916) in his ‘Notes on the Theory of Organization’ postulated the acronym-POSDCORB as the entire gamut of duties for any manager who is at the helm of affairs in any organization. The full form of POSDCORB is Planning, Organising, Staffing, Directing, Coordinating, Reporting, and Budgeting. According to him, “Working out in broad outline the things that need to be done and the methods for doing them to accomplish the purpose set for the enterprise”, managers need different skills for planning. Reporting according to him, was “Keeping those to whom the executive is responsible informed as to what is going on”. Thus, for an administrator to be effective, there is need for adequate planning, which equally depends on available information. School principals must keep themselves, their hierarchy and subordinates informed through records, research and inspection” (Mbua, 2003; Nwafor, 2012). The Diffusion of Innovation (DOI) Theory, developed by Rogers in 1962 accords that people, as part of a social system, adopt a new idea, behaviour, or product Rogers (2003). Rogers (2003), argued that innovations offering more relative advantage, compatibility, simplicity, trialability, and observability will be adopted faster than other innovations. This theory is buttressed by the Technology Acceptance Model (TAM) developed by Fred Davis in 1986. It explains user acceptance of technology based on user attitudes (Odhiambo, 2017). Thus, any technology in the educational sector that is high in perceived usefulness is one in which educationists believes in the existence of a

positive use-performance relationship whereby they have a perception of how useful the technology is in performing their jobs which if performed successfully can result in rewards.

In the management of school information and records, there is need to embrace innovations. The Big Bucket Records Theory (BBRT) explains how large amount of records will be grouped into series or buckets in such a way that records that have similar characteristics will be placed together for easy retrieval and use. The approach consolidates paper and electronic information into broad categories, or buckets (Tanimu, Umar, & Jimoh, 2016). Secondary school heads should consolidate all the paper and electronic records into carefully selected categories or series. All records patterning to a particular event, action or legal proceeding should be classified separately from routine records.

## **METHODOLOGY**

This correlational study was carried out in secondary schools in all the eight (08) Divisions of the West Region of Cameroon. design. This design was chosen because we intended to measure and ascertain whether the association was positive or negative and if it was strong or weak. The population of this study consisted of 479 school principals from which a total sample of 378 principals were selected. First, the stratified sampling was used to put the secondary schools into the 8 strata (Divisions) in the West Region of Cameroon. Furthermore, schools in each stratum were randomly selected. Then, the convenient sampling technique was used to select the particular schools. That is, all the secondary schools in each Division whose principals were readily available and gave their consent were selected. This sampling technique was chosen because of the busy nature of school principals. Consequently, the head of each selected school purposively became the respondent. This was because they constituted the main administrators of these institutions and have a grip of all information and events of the schools. The instruments used for data collection included a semi-structured questionnaire with items mostly identified from literature, an interview guide and an observation guide. The accuracy of the instruments used in collecting data for this study was validated by the expert of Educational Measurement and Evaluation and an expert of Educational Management. Reliability of the Research instruments was ascertained through the test re-test method with a reliability coefficient of 0. 82. The researcher adopted a mixed method in collecting data. That is, self-delivery, the use of research assistants and social media services (mostly via WhatsApp and few emails). Both descriptive and inferential statistics were used in analyzing the instruments. Spearman rho was used to verify the hypotheses. This was chosen because we intended not only to assess the association but also to provide the strength of the linear association between the two variables -EMIS and effective management of secondary schools

## **FINDINGS**

The use of EMIS significantly affects the planning of the school events and processes

In an attempt to meet-up with this objective, the data obtained from the open-ended questions and the interview were content analysed and presented on the table below;

**Table 1: Descriptive analysis on EMIS and the Planning of School Events/Processes**

Items	N	Min.	Max.	Mean	Std. Deviation
The process of handing over (during replacement) requires you to present an inventory of all administrative documents and financial and material resources	364	1.00	4.00	3.3956	.48965
The availability of an information management system in school helps to facilitate the planning for handing over and reporting	364	1.00	4.00	3.6154	.57533
When a school has a good record of its past events, it can easily plan for future events such as assemblies, seminars, games and co-curricular activities, etc.	364	1.00	4.00	1.5192	.58650
It is very necessary to refer to past records whenever we are planning for a future event.	364	1.00	4.00	1.6566	.56548
Good past records like time tables, reports, correspondences etc., can easily be modified to plan for the future ones	364	1.00	4.00	1.4725	.49993
Planning for processes such as dismissal, admission, promotion, makes use of students' past discipline records	364	1.00	4.00	1.5209	.48584
The availability of an information management system in school helps to facilitate the planning and handling of school discipline and decision making	364	1.00	4.00	1.6319	.64852
Valid N (listwise)	364				

Note. 1= Strongly Agree, 2= Agree, 3=Disagree, 4=Strongly Disagree

Source: Researcher's Computation, SPSS Output (2019)

Table 1 above presented respondents views on how EMIS affects the planning of school events/processes in the secondary school. In the first item it was deduced that majority of the respondents disagreed (with a mean of 3.3956) to the fact that the process of handing over (during replacement) requires them to present an inventory or inventories of all administrative documents, financial and material resources. In the second item, respondents equally strongly disagreed (means= 3.6154) to the statement that the availability of an information management system in school helps to

facilitate planning for handing over and reporting in school. This means that EMIS is hardly useful in the handing over ceremonies in schools. Equally, it reveals ignorance of School heads on the fact that it is possible and easier to manage their school and ensure continuity with the use of EMIS. In the third item respondents accepted (Mean =1.5192) that when a school has a good record of its past events, it can easily plan for future events. This appears to be theoretically right but the main problem arises at the level of implementation whereby most of the records are systematically neglected by school authorities. This entails that future planning of the school system may face serious problems as access to past records may be lacking due to poor EMIS practices carried out on the field. Nevertheless, more respondents agreed (mean = 1.6566) that it is very necessary to refer to past records when planning for a future event. Respondents continue to strongly agree (mean = 1.4725) that good past records like time tables, reports, correspondences etc. can easily be modified to plan for the future ones. Also, they agreed (mean = 1.5209) that the process of dismissal makes use of students’ past discipline records. They equally strongly agree (mean = 1.6319) that the availability of an information management system in school helps to facilitate the maintenance of discipline and decision making.

**Table 1: Correlations on the Use of EMIS and Planning for Effective Management**

			EMIS in planning of school events/processes	Effective Management
Spearman's rho	EMIS and planning of school events/processes	Correlation Coefficient	1.000	.656*
		Sig. (2-tailed)	.	.021
		N	364	320
	Effective Management	Correlation Coefficient	.656*	1.000
		Sig. (2-tailed)	.021	.
		N	320	334

\*. Correlation is significant at the 0.05 level (2-tailed).

Source: SPSS Output (2019)

Table 2 above measured the correlation between the use of EMIS and planning for effective management of secondary schools in the West Region of Cameroon. The p-value (0.021) is less than the table value (0.05). Furthermore, the Correlation index stood at 0.656, indicating that the relationship between the use of EMIS and planning for effective management of secondary schools is positive and strong. Based on these, it was ascertained that there is a significantly strong and positive relationship between the use of EMIS and planning of school processes/events for effective management. That is, the more the school principal create and use a data base through an EMIS, the more they become effective particularly in planning their school activities, event and processes and consequently in the management of their institutions as a whole.

The integration of ICT facilities in EMIS significantly enhances effective school management. In order to meet-up with this objective, the data obtained from the open-ended questions and the interview was content analysed and presented on the table below;

**Table 2: Descriptive Statistics on Effect of Integration of ICT Facilities in EMIS on effective School Management**

Items	N	Min.	Max.	Mean	Std. Deviation
The computer and other ICT tools can be used to keep track of students' discipline reports.	378	1.00	4.00	3.4603	.49908
When student' disciplinary records are kept in the computer and other ICT tools, it enables follow-up for effective decision making.	378	1.00	4.00	3.5873	.65069
The computer can facilitate the process of generating varied alternatives for effective decision making.	364	1.00	4.00	1.5357	.72829
Marks kept in the computer are easily accumulated for decision making concerning class promotion and class repetition.	378	1.00	4.00	1.7090	.62229
Records kept in digital forms are easily accessible for you to know something about your students in order to assist them or take any decision about their academic moral or social life.	363	1.00	4.00	2.7796	.67384
The computer reduces stress in recording students' attendance and other records used in making disciplinary decisions.	378	1.00	4.00	1.5450	.49863
Computerized records provide a more reliable, legally verifiable source of evidence for decision and actions.	378	1.00	4.00	1.7460	.65879
When academic records are kept in the computer, the teachers can easily follow-up the students from one class to the other as they progress.	378	1.00	4.00	1.5767	.49473
Computerized records are more durable and accessible than physical records.	378	1.00	4.00	2.0238	.72614
A school with a data base has easier access to its data than a school without a data base	378	1.00	4.00	1.6878	.46399
Valid N (listwise)	349				

**Note.** 1= strongly agree, 2= agree, 3=disagree, 4=strongly disagree

**Source:** Researcher's Computation, SPSS Output (2019)

Most of the respondents disagreed (mean= 3.4603) that the computer can be used to keep track of students' discipline reports. Respondents further disagreed (means = 3.5873) that computerized student' disciplinary records enables follow-up for effective decision making despite these disagreements, respondents agreed (mean = 1.5357) that the computer can facilitates the process of generating varied alternatives for effective decision making. Majority of the respondents agreed (mean = 1.7090) that marks kept in the computer are easily accumulated for decision making concerning class promotion and class repetition. However, the interview revealed that newly appointed principals hardly meet marks data bases for previous years in some schools because outgoing principals practically mishandle them. Again, respondents agreed(mean=2.7796) that records kept in digital forms are easily accessible for teachers to know something about their students in order to assist them or take any decision about their academic moral or social life.

Owing to the benefits of ICTs in education, respondents agreed (mean = 1.5450) that computers reduce stress in recording students' attendance and other information used in making disciplinary decisions. Furthermore, they agreed (mean=1.7460) that Computerized records provide a more reliable, legally verifiable source of evidence for decision and actions. Most of them (mean=1.5767) accepted that when academic records are kept in the computer, the teachers can easily follow-up the students from one class to the other as they progress. and that that Computerized records are more durable and accessible that physical records and that a school with an electronic data base has easier access to its data than a school without an electronic data base respectively (means =2.0238, 1.6878). In as much as respondents said that the computer is not effective in keeping track of students' discipline reports and that computerized student' disciplinary records do not enable effective decision making, they accepted that computer can facilitates the process of generating varied alternatives for effective decision making. They opined that marks kept in the computer are easily accumulated for decision making concerning class promotion and class repetition. Most principals during the interview revealed that marks are generated in the computer not because they want to build up and information system but simply because they want to ease the work following the fast-growing student population. Furthermore, newly appointed principals revealed that they met no marks data bases for previous years in some schools because outgoing principals practically mishandle them.

**Table 3: Correlations on Integration of ICT Facilities in EMIS and Effective Management**

			Integration of ICT facilities in EMIS	Effective Management
Spearman's rho	Integration of ICT facilities in EMIS	Correlation Coefficient	1.000	.876**
		Sig. (2-tailed)	.	.000
		N	349	334
	Effective Management	Correlation Coefficient	.876**	1.000
		Sig. (2-tailed)	.000	.
		N	334	334

\*\* . Correlation is significant at the 0.01 level (2-tailed).

Source: SPSS Output (2019)

Table 4 above measured the correlation between the integration of ICT facilities in the EMIS and effective management of secondary schools in the West Region of Cameroon. The p-value (0.000) is less than the table value (0.05). The correlation is further shown to be significant at 0.01 level. Therefore, the integration of ICT facilities in EMIS significantly enhances effective school management. Furthermore, the correlation index stood at 0.876, indicating that the effect of integrating ICT gadgets and services in the EMIS on effective management of secondary schools is positive and very strong. Based on these, it was ascertained that the integration of ICT facilities in EMIS positively enhances effective school management in a very strong way. That is, the more the school principal integrate ICT gadgets and services in the school’s MIS, the more they become effective particularly in keeping their school records and consequently in the management of their institutions in a holistic manner.

**Strategies for improving the effectiveness of secondary school management vis-à-vis the use of EMIS**

In an attempt to meet-up with this objective, the data obtained from the open-ended questions and the interview were content analysed and presented on the table below;



**Table 5: Strategies to Improve the Effectiveness of School Management vis-à-vis EMIS**

S/N	Proposed strategy	Frequency	Percentage
1.	Training principals to use ICTs	257	68
2.	Development of a common MIS by MINESEC	213	56
3.	Coping with Stress	30	8
4.	Provision of ICT tools to each school by government	301	80
5.	PTA/Partners recruiting an information manager	73	19
6.	Educating all staff on management of school information	87	23
7.	Provision of information management expert to develop a situational MIS for each school	332	88
8.	Purchasing a standard EMIS	105	28

Source: Researcher’s computation (2019)

Table 5 above displayed content analysis from both open-ended questions and the interview guide. It was deduced that out of the 378 Principals who took part in this work, 257 (68%) were of the opinion that to improve upon the management of their schools vis-à-vis EMIS, there is need for principals to be trained in the use of ICT tools; 213(56%) said effective management can be enhanced by if MINESEC develops a common EMIS and distribute t schools; 30(8%) said it can be enhanced if school Principals can manage their stress at work;301(80%) said it can be improved if the government provided each school with the necessary ICT tools; and 73(19%) of them said it is by recruiting information managers by the PTA and school partners that the management of their schools can be improved in terms of handling information and records. Furthermore, 87(23%) said improvement can be if all staff are educated on the management of school information; a good number 332(88%) of them insisted that the effectiveness of their school can be improved if the schools are provided with information management expert to develop a situational MIS for each school; and 105 (28%) advocated for the purchase of a ready-made standard EMIS for the management of school information.

**DISCUSSION**

Principals acknowledged the fact that the availability of an Information Management System in school helps to facilitate the planning and handling of school affairs. That is, the more the school principal create and use a data base through an EMIS, the more they become effective particularly in planning their school activities, event and processes and consequently in the management of their institutions as a whole. Though school principals said that the process of handing over does not make proper use of the EMIS and that the availability of an information management system in school does not facilitate the handing over and reporting of school events and processes, they agreed that it is very necessary to refer to past records when planning for a future event. Good past records like

time tables, reports, correspondences etc. can easily be modified to plan for the future ones. Equally, they can be used to trace students' conduct for a better decision-making process. Therefore, the availability of an information management system in school helps to facilitate the planning for future events and maintenance of discipline. This outcome is in congruence with Bhatti & Adnan (2010), who postulate that information System is now decentralized with a purpose to support education planning and decision making at decentralized level. That is, EMIS is purported to support the planning of activities, processes and events at the school level.

Furthermore, principals moderately integrate ICT facilities in EMIS for effective management of their schools. Findings revealed that there are attempts of effective integration of ICT facilities in EMIS in secondary schools except in the domain of discipline. That is, the more the school principal integrate ICT gadgets and services in the school's MIS, the more they become effective particularly in keeping their school records and consequently in the management of their institutions in a holistic manner. Therefore, school Principals acknowledge the strong positive effect of integrating ICTs in the MIS of the school when it comes to managerial functions as they stated that "We do not use EMIS data regularly; I should say that this is our weakness. We mostly use data during critical moments such as the national budget sessions or when political issues arise". Yet, they partially integrate the ICT in their day-to-day functioning as important gadgets such as photo Camera, scanner and photocopy are not practiced. The integration is limited to the use of computers and storage devices from which printing could be done out of the campus in most cases. This finding is contradicted by China & Wu (2015), who found that ICT plays an insignificant role in the management of city schools and concluded that its role in city schools should be reinterpreted. On the other hand, the findings are in congruence with Arends (2004), who points out clearly that digitalising EMIS will lead to the ability to handle massive data volume; faster processing capacity such as searching, sorting, and retrieving information; greater accuracy and uniformity; systematic information flow and greater security and easier maintainability.

Considering the need for accumulation of data and the period of time over which records have to be kept, the most common and modern arrangement that emerges in record keeping in recent times is computerization. This has made information and its management easy and efficient in terms of generation, organization, storage, utilization, retrieval and even destruction (when necessary). Therefore, the construction of a computerised MIS is imperative for secondary schools if they have to be effectively managed.

Finally, school principals have inadequate training in the use of ICT tools and have an inadequate supply of such tools. This renders the management of school information tedious and time consuming and consequently impedes effective school management. This is in line with Omoha (2013) who found that there are so many problems associated with records keeping management in secondary school system; and that through various ideal administrative practices and strategies, there will be holistic improvement on records keeping in school system. Thus, if the above-mentioned

strategies are considered, there will be a holistic improvement on the management of secondary schools.

## RECOMMENDATIONS

1. The government should adopt an explicit strategy for the decentralisation of technical support (including preventative maintenance), in order to service efficiently the needs of all users and computers in the education system. This could reduce the rate of spoilage and consequent
2. A special unit at the Ministry of Secondary Education should be created to design, disseminate and harness an adapted EMIS and train personnel to manage information for the Cameroonian Education System. Such a unit if well-staffed can coordinate the collection and distribution of information within the educational system.
3. A well planned EMIS policy should be promulgated to school Principals including strict Rules and guidelines for what should be kept and for how long.
4. Based on the local realities of their zones, delegates and principals should design a template format for the creation, storing and retrieval of information and records within their zones. This will provide a common strategy and methodology that can lead to a standard MIS for specified areas.
5. Heads of schools should individually go for professional development in Results-Based Management so that they may better understand the system in order for them to effectively facilitate its full implementation.

## CONCLUSION

There is a need for well-organized data presentation and data interpretation standards to provide managers with useful and relevant information. Modern EMIS significantly influences the effective management of secondary schools as concerns planning of school resources activities, events and programmes. Specifically, the planning of school processes/events with the integration of ICT facilities enhances effective school management. EMIS is making gains in improving the availability, relevance, and timeliness of data about the education system. Improving the information available to decision-makers has not always led to better decisions or better practice. Schools needs to be assisted in developing school based operational systems that also provide strategic information for policy making, for resourcing, for planning and for delivery. Schools would thus require three types of information systems: (1) School management information systems (2) School governance information systems and (3) Parent information systems. In order for these information systems to work effectively the school Principal has to combine them with some training (technical Skills), knowledge of systems (conceptual skills), and the human face (human relations skills).

In this information age, an uninformed or imprecise school head is as good as dead. To be able to capture, store, retrieve and use information speedily and appropriately for school effectiveness and efficiency, every school requires an effective Management Information System (MIS). The MIS should be both manual and computer-based with the long-term learning towards computer-based

MIS operations. Therefore, the development and effective use of a situational software adapted for schools in Cameroon could go a long way to reduce the stress principals go through in managing the plenty information at their disposal. But this can only be possible if the necessary skills and facilities are readily available. As a strategy to improve upon the weaknesses in handling school information, the provision of information management expert to develop a situational MIS for each school, the provision of ICT tools to each school by government; training principals to use ICTs, development of a common MIS by MINESEC and purchasing a standard EMIS could be of utmost importance.

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