



## Looking through the Lenses of Educational Management Information Systems (EMIS)

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**Abstract.** The study examined the user awareness and use of Educational Management Information Systems (EMIS) by educational stakeholders, e.g. educators, parents, guardians, students, educational NGOs and consultants and the public in the Greater Accra Region in Ghana. The descriptive research design was used for the study. Purposive sampling technique was employed in selecting the sample for the study. The coverage area for the study was the Greater Accra Regional Education Office, two other municipal and one metropolitan Education Office. The study sample size was 48 which included the Regional/ Metropolitan/ Municipal Directors of Education with their four Frontline Assistant Directors. Others that were included in the sample were EMIS Co-ordinators, EMIS officers, Circuit supervisors, Heads of Primary, Junior and Senior High Schools and Teachers. The instrument used for data collection was self prepared. In all, there were three research questions which were all captured by the instrument for data collection. The study revealed that: EMIS offices are present in the Regional and District Education Offices included in the sample in the Greater Accra Region; there is user awareness among educational stakeholders identified in the study, the core objectives of EMIS are being met; Ministry of Education sees the Annual School Census as the most important source of information regarding the situation of every school. It was further found that EMIS has no dedicated website. Also, EMIS users are usually those who are aware of its existence, hence awareness of EMIS informs its utilisation. Parents are rare users of EMIS. The study recommended that EMIS should have a dedicated and reliable website where users, patrons, researchers and stakeholders could rely on for educational information.

**Keywords:** awareness, EMIS, lens and utilisation.

### Introduction

When do we look through a lens? We may look through one when it becomes necessary because of a visual deficiency or when it has been recommended to us by a physician due to the latter. Lenses are usually used to correct visual anomaly or to prevent further visual deterioration. Perhaps, the lenses may be likened to the Educational Management Information Systems not only as a corrective device but also as an aid to unlocking information that may seem blurred, unseen, unclear or not known by the players in the sector of Education. Today, Information and Communication Technology (ICT) has become, within a very short space of time, one of the basic building blocks of modern society. Many countries now regard understanding ICT and mastering the basic skills and concepts of ICT as part of the core of education, alongside reading, writing and numeracy [1]. In view of this, many sectors in the entire world around, including education employ the use of modern systems in their day-to-day activities and management. Others spend huge sums of money

to digitalise the paper systems or databases. The advantages of this digitalisation of databases may have influenced the introduction of the Education Management Information System (EMIS) in Ghana [2]. “EMIS is a concept imported from the business world. It is an Acronym for a System for processing Information for Management of Education. It is not purely statistical-based” [3]. EMIS was a World Bank project which has been in existence for sometime now in countries such as Bangladesh, Ghana, Nigeria and Mozambique. In Ghana, EMIS was established as far back as 1988 in the Ministry of Education as part of the then educational reforms [4].

More formalised attempts at developing the EMIS occurred in the late 1990s when the government of Ghana started to implement the policy of free compulsory universal basic education (fCUBE) [5] and as a result, the Ministry of Education launched the EMIS Project in January 1997, with technical support (during the first and second phases) from the Harvard University and funds from the World Bank and Government of Ghana [5]. Following that, the development of EMIS was organised into three phases namely, the Pilot, the Improvement of Capacity and Development of the IT Infrastructure and finally the Enhancement and Expansion phases. Currently, EMIS can be located in all districts, municipalities, metropolitan and regional offices of the Ghana Education Service. By 2009, “The EMIS staff had installed an EMIS programme on every computer in the 168 districts used for data entry” [6]. The core business of this management system is to enable policy formulation, operational planning and subsequent monitoring of targets through periodic review by stakeholder participation. In addition, it is to calculate levels of disadvantage and related budget allocations. Eventhough “Ghana's EMIS is an example of good practice in Africa for decentralised planning and budgeting, supporting reforms at various levels” [5], the question still remains whether educational stakeholders look through the lenses of EMIS by making good utilisation of the EMIS system in Ghana. One may not look through a lens if one does not know about its efficacy or does not know about it. One may also not look through a lens if one does not trust the lens or thinks that the lens is incapable of solving a problem. This paper reports on the extent to which the EMIS lenses are being looked through by educational stakeholders and why they look through them. The study was guided by the following research questions.

### **Research Questions**

1. To what extent are educational stakeholders aware of EMIS, specifically those identified in the study?
2. Who are the perceived educational stakeholders who use EMIS?
3. How does the perceived major users of EMIS use it?

### **Design of the Study**

The study was a non-experimental descriptive research survey. A descriptive research is one that specifies the nature of a given phenomenon. Descriptive research studies are designed to obtain information concerning the current state of affairs [7]. The contention of the latter is in conformity with the explanation that descriptive research is one that involves collecting data in order to test hypotheses or answer research questions concerning the current status of the subject of the study [8]. Again, some authorities have described the descriptive research as a research that is concerned with the conditions or relationships that exist, such as determining the nature of prevailing conditions, practices and attitudes; opinions that are held; processes that are going on; and/or trends that are developed [9].

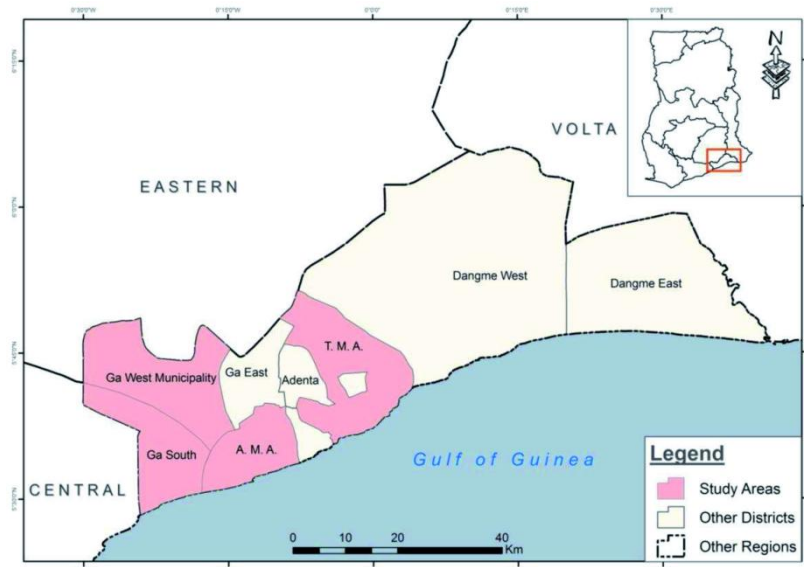
Nevertheless, there are some difficulties that may come with the descriptive research, in that, because of the shortcomings of descriptive research, questionnaire items must be clear to avoid ambiguity [10]. Again, this type of research design may not in itself be comprehensive enough to provide answers to questions and cannot establish causes and effect relationship [11]. In spite of these challenges regarding the use of descriptive research, the design was considered the most appropriate for this study in the light of the latter's purpose, the descriptive research design for this

study was also qualitative in character. Qualitative research, broadly defined, means "any kind of research that produces findings not arrived at by means of statistical procedures or other means of quantification" [12]. The type of qualitative research that was employed was a case study of the user awareness and utilisation of EMIS in the Greater Accra Region in Ghana likening user awareness and utilisation of EMIS to the lenses. A case study as a story about something unique, special, or interesting stories can be about individuals, organisations, processes, programmes, neighbourhoods, institutions, and even events [13].

In addition to the earlier submissions, it is also of an important view to note that descriptive surveys focus on determining the status of a defined population with respect to certain variables [14]. Basically, the descriptive research design was used in order to collect data through a questionnaire to describe the nature of prevailing conditions, practices and attitudes; opinions that were held as well as trends that were developed with regard to EMIS in Ghana and then report the reasons that informed the current status of awareness and utilisation of EMIS data in the Greater Accra Region of Ghana.

### Sample and Sampling Procedure

Sampling refers to strategies that enable the researcher to pick a subgroup from a larger group and then use this subgroup as a basis for making inferences about the larger group [15]. Out of the two metropolis in the Greater Accra Region of Ghana which were purposively sampled for the study because it is endowed with electronic resources including computers, one of them was selected while two municipalities out of the then existing six were also selected purposively for the same reason regarding resources study. These are the following directorates that were sampled purposively (using the same resource criteria) for the study: Accra Metropolis, Ga South Municipality and Ga West Municipality (Refer to Fig. 1). In addition, the Greater Accra Regional Education Directorate was also sampled purposively. Using the same technique and criteria, seven schools were sampled from the Accra Metropolis and the two Municipalities. The two key justifications that led to the choice of the above directorates and schools for the study are: The EMIS units in the Greater Accra Region of Ghana are well established and also because the authors had proximity advantage to them.



**Fig. 1:** Map of Greater Accra Region of Ghana and its neighbours.

**Source:** Department of Geography & Regional Planning, University of Cape Coast, Ghana.

**Table 1: Distribution of samples used for the study**

Sample	No
Head of EMIS, Greater Accra Region	1
Director of Education, Greater Accra Region	1
Planning officer of Education, Greater Accra Region	1
Human Resource officer of Education, Greater Accra Region	1
Metropolis/ Municipality/District EMIS officials	11
Metropolis/ Municipality/District Directors of Education	3
Metropolis/ Municipality/District, A.D. Planning officers of Education/ Statistics (EMIS Officer)	3
Metropolis/ Municipality/District, A.D. Finance & Administration of Education	3
Metropolis/ Municipality/District, A.D. Human Resource officers of Education	3
Metropolis/ Municipality/District, A.D. Supervision officers of Education	3
Metropolis/ Municipality/District Circuit Supervisors of Education	8
Officers-in-charge (OIC)	3
Heads of Schools (Primary, JHS and SHS)	7
<b>Total</b>	<b>48</b>

### Instruments

The questionnaire was the main instrument used for the study and it was specifically developed for the study. The questionnaire as an instrument was used because the entire sample population for the study could read and write. It has been explained that, a questionnaire consists of questions or statements related to the aims of the study, the research questions to be verified and answers to which the respondent is required to answer by writing [16]. Using the questionnaire as a survey instrument was vital because it does not allow the researcher to influence the respondent while ensuring the anonymity of the respondent. Other reasons for choosing the questionnaire is that it provides a fast way of collecting data and also known to be quite valid and reliable if well constructed. It also saves time and money and the data obtained are reliable because the responses are limited to alternatives stated. Giving numerous reasons to justify the advantages of a questionnaire does not cancel out the few disadvantages that are associated with it. That is, respondents may be unable or unwilling to provide the desired information since some of them may question the motives of the study. Again, the proper wording of question items is not easy since misunderstanding of the question items may contribute to a misrepresentation in the final analysis in a study. Attempts were made to minimise or eradicate any of the above limitations of the questionnaire through a pilot test.

### Data Collection Procedure

The instrument, which had been pilot tested earlier to improve its validity and reliability, was self-administered to the respondents. Respondents were briefed on both the research and their ethical rights. They were made aware that they could pull out of the research at anytime they thought they could no longer be part of the study. The lead author administered the questionnaires personally and waited to collect them after the respondents had completed them. In some cases, respondents asked that the questionnaires be collected at a later date that was agreed with them. To promote an easy tracking system of the questionnaires, they were given serial numbers and upon collection, the questionnaires were quickly glanced through to see if all questions were answered. The entire administration and collection process of the instrument covered approximately five

weeks - from 1<sup>st</sup> November to 6<sup>th</sup> December, 2010. All completed questionnaires were retrieved ensuring one hundred percent rate of return.

### Data Analysis

The Statistical Package for Social Sciences (SPSS) version 18.0 was used in the analysis. The data collected were organised, edited, and coded in readiness for the analysis. The possible responses of each question item were given a unique code. For example, question items that had three possible responses (A), (B) and (C) were assign 1, 2, and 3 respectively. This was done to promote easy data inputting and analysis. Responses from question items in the Instrument that were open ended were first categorised and coded into sub-themes. Responses for the sub-themes were aggregated and the percentages and frequencies computed.

### Results

**Table 2: Distribution of Respondents by Gender**

Gender	Frequency	Percentage (%)
Male	28	58.3
Female	20	41.7
<b>Total</b>	<b>48</b>	<b>100</b>

Table 2 shows the distribution of respondents by gender. From the table, 28(58%) respondents were males as against 20(41.7%) females. The representation suggests that, more males than females were involved in EMIS in the districts sampled for the study.

#### **Research Question 1: To what extent are educational stakeholders aware of EMIS, specifically those identified in the study?**

This research question sought to identify the extent to which respondents were aware of EMIS. Respondents' awareness about EMIS implies knowledge about its core functions and importance. Specifically, various questions (as items of the questionnaire) were asked based on the functions and importance of EMIS. Table 3 presents the various responses under the research question which were Yes, No or I don't know question items.

**Table 3: Respondents' knowledge about EMIS**

Item	Frequency	Yes	No	I don't know
Are you aware of EMIS?	48	48(100.0%)	0 (0.0%)	-
EMIS is used for school mapping and school census	48	48(100.0%)	0 (0.0%)	0 (0.0%)
EMIS is of value to educational administration	48	48(100.0%)	0 (0.0%)	0 (0.0%)
EMIS is of value to supply of school resources	48	44(91.7%)	2(4.2%)	2(4.2%)
EMIS is of value to governance of schools	48	47(97.9%)	1(2.1%)	0 (0.0%)
EMIS is an educational management tool	48	46(95.8%)	2(4.2%)	0(0.0%)
EMIS is an educational database tool	48	48(100.0%)	0 (0.0%)	0 (0.0%)

According to Table 3, all the 48(100.0%) respondents were aware of EMIS. By this, it can be said that, EMIS was not a new concept to the respondents. It also presupposes that their awareness about EMIS went beyond the mere name, EMIS.

All 48(100%) of respondents, according to the table, agreed that EMIS is used for school mapping, school census and is also of value to educational administration. This confirms awareness of the respondents about some of the fundamental functions of EMIS. Being aware of EMIS and its

core functions and importance also suggests their connection with some EMIS operations because, in 2006, there were announcements in all the education offices from the Ministry of Education and Science (MOES) that the data from school mapping would be used as the basis for developing district operational plans [5].

Since only 2(4.2%) of the respondents as against the majority 44(91.7%) disagreed to the assertion that EMIS is of value to supply of school resources, it is consistent with the view that, the allocation of scarce resources is one of the fundamental tasks of management [17]. Based on this, one may agree with the claims that administrative applications of EMIS support direct functions – such as the allocation of teachers or funds [18]. Information on educational issues is important since it has implications for resource allocation and for determining where support is needed most [5]. Data from EMIS is what is used for school resources allocation including staffing, textbooks, and school infrastructure.

According to Churchman, management is responsible for allocating resources in order to achieve an organization's purpose: In organizations, the decision-making function is the responsibility of management. In order to execute its responsibility, an organization's management requires information about the resources available to it and their relative effectiveness for achieving the organization's purpose. Resources are acquired, allocated, motivated and manipulated under the manager's control. They include people, materials, plant and equipment, money, and information as cited in [19].

However, the 2(4.2%) who disagreed to the statement under discussion may have taken that stand because they may not have seen the relevance of EMIS or they may have thought that EMIS is either doing little in that area or the system could be improved to make EMIS valuable to supply of school resources [2]. This in a way, suggests that, EMIS can be improved in the area of supply of school resources.

From Table 3, 47(97.9%) respondents thought that EMIS is of value to governance of schools as opposed to 1(2.1%) who was in disagreement with this assertion. Governance is the action or style about control of policy and affairs of a state, organisation or people [20]. There exist a relationship between governance and decision making [2]. Management Information Systems provide regular information to managers to allow them make decisions based on data rather than guesses. Authorities have maintained that, certain data and analysis can play a very useful role in making good decisions about where and when to use human and other resources to achieve the mission of an organization [21].

From Table 3, 46(95.8%) respondents agreed that EMIS is an educational management tool as against 2(4.2%) respondents. To support the previous, it was asserted that, the management of an educational department is traditionally complex and fraught with details and that an effective EMIS can go far to support the development of a management framework [22].

On the other hand, they again made an assertion that supports the position of the 2(4.2%) respondents who disagreed that EMIS is an educational management tool. To them, technology has provided many new tools and options for ministries and schools but can easily be misconstrued as being the final product. EMIS may just be riding on the back of technology but not an educational management tool [2].

Again Table 3 has all 48(100.0%) respondents agreeing that EMIS is an educational database tool. This supports the claim by the Ministry of Education who sees the Annual School Census as

the most important source of information regarding the situation of every school because information collected through the media contributes to the Education Management Information System of every region [17].

### **Research Question 2: Who are the perceived educational stakeholders who use EMIS?**

During the pilot study that preceded the present study, a number of educational stakeholders were identified as users of EMIS. With this baseline information, respondents were identified as major players in the educational industry in Ghana, they were also asked to provide perceived users (individuals and institutions) of EMIS in their opinion. Table 4 clearly shows stakeholders of

education who are perceived users of EMIS which implies that they are also individuals and institutions who are aware of EMIS:

**Table 4: Users of EMIS**

S/N	Users of EMIS	Yes	No	I don't know
1	Ministry of Education	48(100%)	0 (0.0%)	0(0.0%)
2	Directors of Region/ Metropolitan/ Municipal/ District Education offices	48(100%)	0 (0.0%)	0(0.0%)
3	GES (Dep. Directors, Scheduled Officers, etc.)	44(91.7%)	0 (0.0%)	4(8.3%)
4	Metropolitan/ Municipal/ District Assembly	41(85.4%)	1(2.1%)	6(12.5%)
5	Teachers	24(50.0%)	14(29.2%)	10(20.8%)
6	Parents	10(20.8%)	21(43.8%)	17(35.4%)
7	Headmasters/ Headteachers	35(72.9%)	7(14.6%)	6(12.5%)
8	Circuit supervisors	38(79.2%)	5(10.4%)	5(10.4%)
9	NGO	39(81.3%)	4(8.3%)	5(10.4%)
10	Researchers	39(81.3%)	1(2.1%)	8(16.7%)
11	UNESCO	35(72.9%)	0(0.0%)	13(27.1%)
12	Others (Plan Ghana, Journalists, Individuals)	8(16.7%)	–	8(83.3%)

Table 4 gives an indication that, respondents perceive the above stakeholders to be utilisers of EMIS. However, EMIS may not have been very popular among parents and teachers [2] because only 10(20.8%) of respondents thought parents are not users of EMIS. Again, there may be other reasons why that is worth investigating why 24(50%) of teachers are perceived by respondents to be users of EMIS. This is because since teachers usually play major roles as stakeholders, executors and interface between the schools and other stakeholders.

There seems to be a relationship between user awareness and use of Educational Management Information System in the Greater Accra Region. The more useful a user perceives a particular technology the better they engaged in its use [23]. This opinion confirms usage of EMIS by the above individuals and institutions who are also stakeholders in the educational environment in Ghana.

### **Research Question 3: How does the perceived major users of EMIS use it?**

This research question was designed to help the researchers identify (perceived users of EMIS). The data in Table 5 shows the various categories of institutions/ individuals whom the respondents knew to be users of EMIS. This approach was used to gather the data because EMIS officers knew who uses EMIS. However, not all EMIS officers knew all those who use EMIS hence the other respondents i.e. non-EMIS officers were also required to give data on the users of EMIS they knew since they all work closely together in the education sector. Nonetheless, if they did not know that a particular category of people use EMIS they were allowed to say they do not know. As mentioned

earlier on, most of the user categories were identified during the pilot study. In the questionnaire, respondents were asked to identify the various institutions/ individuals they knew to be users of EMIS by answering Yes or No or I don't know to each question.

**Table 5: Perceived Main Uses of EMIS by the Ministry of Education**

Uses of EMIS	Frequency	Percentage (%)
For planning, budgeting monitoring and evaluation of educational indicators	14	29.2
For the allocation of resources (infrastructure, personnel and logistics)	9	18.8
For policy formulation and implementation	11	22.9
For the general management of the educational sector	5	10.4
Other (database, reports, etc)	9	18.8
<b>Total</b>	<b>48</b>	<b>100</b>

Table 5 indicates that the highest frequency, 14 (29.2%) respondents were aware that the Ministry of Education (MOE) uses EMIS for planning, budgeting monitoring and evaluation of educational indicators. The allocation of resources (infrastructure, personnel and logistics) had a frequency of 9(18.8%), policy formulation and implementation was the second highest in terms of frequency and percentage. Also, from Table 5, the lowest use in terms of percentages and frequencies use as perceived by respondents were 5(10.4%) who thought that MOE use EMIS for the general management of the educational sector. The remaining 9(18.8%) knew other uses such as database and for reports by the Ministry of Education. Thus, one can say that respondents generally perceive the Ministry of Education as users of EMIS mostly for planning, budgeting, monitoring and evaluation of educational indicators and for policy formulation and implementation. Table 6 looks at the (perceived) main uses of EMIS by identified Directors

**Table 6: Main Use of EMIS by Directors of Regional/ Metropolitan/ Municipal/ District Education Offices**

Uses of EMIS	Frequency	Percentage (%)
For planning, budgeting monitoring and evaluation of educational indicators	12	25.0
For the allocation of resources (infrastructure, personnel and logistics)	11	22.9
For policy formulation and implementation (infrastructure, personnel and logistics)	4	8.3
Serves as database/ inventory (for resources, personnel and students)	8	16.7
For efficient management including training and remediation purposes	9	18.8
Others (Reports, Annual Review reports, etc)	4	8.3
<b>Total</b>	<b>48</b>	<b>100</b>

Reading from Table 6, the frequencies and percentages show that, 12(25.0%) of the respondents knew that the Directors of Education use EMIS for planning, budgeting monitoring and evaluation of educational indicators while 11(22.9%) also knew that they use it for the allocation of resources (infrastructure, personnel and logistics). At the other extreme end, the Directors were not perceived to be regular users of EMIS mostly for policy formulation and implementation (infrastructure, personnel and logistics) and other things such as Reports. This is evident in the frequencies and percentages recorded in Table 6 as having only 4(8.3%) respondents who knew that the Directors use EMIS for these purposes. In addition to this, the study also sought to find out the main uses of EMIS as perceived by the respondents. Each respondent was required to identify only one use they perceived was the most frequent use of EMIS. Tables 7-15 presents the information gathered to the third research question.



**Table 7: Perceived Main Uses of EMIS by Ghana Education Service (Deputy Directors and other Scheduled Officers etc.)**

Uses of EMIS	Frequency	Percentage (%)
For planning, budgeting, monitoring and evaluation of educational indicators	14	31.8
For the allocation of resources (infrastructure, personnel and logistics)	10	22.7
Disbursement of capitation grant	3	6.8
Policy implementation and interpretation	6	13.6
For efficient and strategic school management including training and remediation purposes	5	11.4
Others (E.g. Baseline exams)	6	13.6
<b>Total</b>	<b>44</b>	<b>100</b>

The totals in Table 7 show the number of respondents who knew Ghana Education Service (Deputy Directors and other Scheduled Officers etc.) use EMIS. Forty – four out of 48 respondents knew the Ghana Education Service (Deputy Directors and other Scheduled Officers etc.) use EMIS but gave different uses of EMIS by Ghana Education Officers they knew use the system. Thus, majority of 24(54.5%) thought planning, budgeting, monitoring and evaluation of educational indicators and the allocation of resources were some of the main uses of EMIS by Ghana Education Service as against the background that only 3(6.8%) thought that GES use EMIS mainly for the disbursement of capitation grant. Generally, one would have expected that since public Basic schools enjoyed capitation grants and related issues bothering on resources, majority of respondents would have drawn a stronger association between GES, capitation and EMIS.

**Table 8: Perceived Main Uses of EMIS by Metropolitan/ Municipal/ District Assemblies**

Uses of EMIS	Frequency	Percentage (%)
For planning, budgeting, monitoring and evaluation of educational indicators	9	22.0
For allocation of resources and also serves as resource inventory (infrastructure, capitation grant and logistics)	19	46.3
Policy formulation, implementation and projections	8	19.5
Others (Political interventions, to check status of drop-rate, etc)	5	12.2
<b>Total</b>	<b>41</b>	<b>100</b>

Earlier on in Table 4, it was recorded that 41 out of 48 respondents knew some of their perceived users of Metropolitan/Municipal/District Assemblies. Additionally, they also gave different perceived users as EMIS by the Assemblies they knew about.

Table 8 shows indicates that, 9(22.0%) knew that the Assemblies use EMIS for planning, budgeting, monitoring and evaluation of educational indicators whereas 19(46.3%) respondents also knew that the Assemblies use EMIS for allocation of resources and also serves as resource inventory (infrastructure, capitation grant and logistics) where only 8(19.5%) knew that EMIS is used for policy formulation, implementation and projections by the Assemblies. Since the majority of 19(46.3%) respondents thought the main uses of EMIS by Metropolitan/Municipal/District Assemblies is the allocation of resources and also resource inventory (infrastructure, capitation grant and logistics), one can perceive the allocation of resources and resource inventory for education by Metropolitan/Municipal/District Assemblies as the main use of EMIS.

**Table 9: Perceived Main Uses of EMIS by Teachers**

Uses of EMIS	Frequency	Percentage (%)
For checking of available vacancies for possible transfers or appointments	7	29.2
For monitoring and evaluating their schools performance	10	41.7
Policy implementation	5	20.8
Educational database	2	8.3
<b>Total</b>	<b>24</b>	<b>100.0</b>

Again in Table 4, it was noticed that, 24(50%) out of 48(100%) respondents knew teachers use EMIS but gave different uses of EMIS by teachers whom they knew used the system. According to Table 9, there were 7(29.2%) and 10(41.7%) of the total respondents who knew that teachers use EMIS for checking of available vacancies for possible transfers or appointments and also for monitoring and evaluating their schools' performance respectively. Furthermore, while only 5(20.8%) of the total respondents knew that teachers use EMIS for Policy implementation. For teachers' main uses of EMIS, it can be concluded that they use EMIS for monitoring and evaluating their schools performance and for checking of available vacancies for possible transfers or appointments. Since 17(70.9%) uphold these views, one can say that teachers mainly use EMIS for monitoring and evaluating their schools performance and for checking of available vacancies for possible transfers or appointments.

**Table 10: Perceived Main Uses of EMIS by Parents**

Uses of EMIS	Frequency	Percentage (%)
For school selection (Senior High Schools) purposes for their wards	3	30.0
Serves as a status report for their wards' schools (facilities and performance)	2	20.0
Use EMIS report as basis for support to schools and learners (Example is infrastructural development)	5	50.0
<b>Total</b>	<b>10</b>	<b>100</b>

Ten out of 48 respondents knew parents use EMIS but gave different uses of EMIS by parents they knew use the system. This shows that EMIS is probably not well known among parents hence its minimal usage by them.

From Table 10, while 3(30.0%) of the respondents knew that parents use EMIS for school selection (Senior High Schools) purposes for their wards, only 2(20.0%) knew that EMIS serves as a status report for the schools (facilities and performance) their wards attend. The majority, i.e. 5(50.0%) knew that parents use EMIS report as a basis for support to schools and learners (Example is infrastructural development). From data presented in Table 10, one can state easily that respondents perceive parents to be rare users of EMIS. Even though 5(50%) thought that, parents who use EMIS use its report as basis for support to schools and learners.

**Table 11: Perceived Main Uses of EMIS by Headmaster/ Headmistress and Headteachers**

Uses of EMIS	Frequency	Percentage (%)
For planning, budgeting, monitoring and evaluation of educational indicators of their schools	10	28.6
For the allocation of resources (infrastructure, personnel and logistics)	7	20.0
Gives status report to heads on their schools performance	6	17.1
Serves as database/ inventory (for resources, personnel and students)	4	11.4
For efficient management including training and remediation purposes	5	14.3
For assessment of strengths and weaknesses of their schools	3	8.6
<b>Total</b>	<b>35</b>	<b>100</b>

Table 11 shows the totals of the number of respondents who knew that the individuals under discussion use EMIS. Thirty – five out of 48 respondents knew Heads of Schools use EMIS but gave different uses of EMIS by Heads of Schools they knew use the system.

From Table 11, 17(48.6%) respondents thought Headmasters mainly use EMIS for planning, budgeting, monitoring and evaluation of educational indicators of their schools, and for the allocation of resources. These main uses of EMIS by headmasters have the potential of increasing their work outputs. It is very interesting to notice that only 3(8.6%) are the only ones who perceive Heads of Schools to have been using EMIS for assessment of strengths and weaknesses of their schools because EMIS is best for indicating strengths and weaknesses of schools.

**Table 12: Perceived Main Uses of EMIS by Circuit Supervisors**

Users of EMIS	Frequency	Percentages (%)
For planning, budgeting, monitoring and evaluation of educational indicators of their schools	7	18.4
For the allocation of resources (infrastructure, personnel and logistics)	7	18.4
Serves as status report to Circuit Supervisors in their circuits	3	7.9
Serves as database/ inventory (for resources, personnel and students)	12	31.6
For managing and mapping strategies for effective supervision and visits	9	23.7
<b>Total</b>	<b>38</b>	<b>100</b>

In Table 4, the totals show the number of respondents who knew that the Circuit Supervisors use EMIS. Thirty–eight out of 48 respondents knew Circuit Supervisors use EMIS but gave different uses of EMIS by Circuit Supervisors they knew use the system. Data presented in Table 12 indicates that Circuit Supervisors have varied uses of EMIS such as planning, resource inventory and for managing and mapping strategies for effective supervision and visits. Seven (18.4%) respondents knew that Circuit Supervisors use EMIS for planning, budgeting, monitoring and evaluation of educational indicators of their schools. Once more, 7(18.4%) knew that Circuit Supervisors use EMIS for the allocation of resources (infrastructure, personnel and logistics) whiles 3(7.9%) knew that it serves as status report to Circuit Supervisors in the various educational circuits. Again, 12(31.6%) also knew that EMIS serve as a database/ inventory (for resources, personnel and students) and finally 9(23.7%) knew that they use it for managing and mapping strategies for effective supervision and visits in the circuits.

**Table 13: Perceived Main Uses of EMIS by Non-Governmental Organisations (NGOs)**

Uses of EMIS	Frequency	Percentage (%)
To offer assistance/ support where necessary (Example, infrastructure)	19	48.7
To offer free training, Teaching and Learning Materials (TLMs) and Awards to deserving students and workers in the educational sector	7	17.9
Embark on enrolment and expansion drive for communities that are experiencing school drop-outs	6	15.4
Use EMIS data to solicit for support to build capacity and to also advocate for improvement where educational standard are falling	7	17.9
<b>Total</b>	<b>39</b>	<b>100</b>

In Table 13, it can be observed that, 19 (48.7 %) respondents knew that NGOs use EMIS to enable them offer assistance/ support where necessary (Example, infrastructure). Again, 7(17.9%) knew that NGOs use EMIS to enable them offer free training, Teaching and Learning Materials (TLMs) and awards to deserving students and workers in the educational sector. Furthermore, only 6(15.4%) knew that NGOs again use EMIS to help them embark on enrolment and expansion drive for communities that are experiencing school drop-outs. Finally, 7(17.9 %) of the total respondents knew that NGOs use EMIS data to solicit for support to build capacity and to also advocate for improvement where educational standard are falling. According to the Support for Analysis and Research in Africa Project (2003), there are two reasons why NGOs want to influence education policies: They do that out of necessity and to promote public participation in education decision making. This strongly supports the majority of the respondents 19(48.7%) that thought that through EMIS, NGOs offer assistance/ support such as the provision of infrastructure to the educational sector. It further supports the 7(17.9%) that also thought that NGOs offer free training, Teaching and Learning Materials (TLMs) and Awards to deserving students and workers in the educational sector.

**Table 14: Perceived Main Uses of EMIS by Researchers**

Users of EMIS	Frequency	Percentages (%)
Monitoring and evaluating educational indicators	13	33.3
For giving suggestions and proposals to solutions on some research findings on educational matters	10	25.6
Academic purposes	9	23.1
Predictions	5	12.8
Others	2	5.1
<b>Total</b>	<b>39</b>	<b>100</b>

Table 14 shows the totals of the number of respondents who knew that the individuals under discussion use EMIS. Thirty-nine out of 48 respondents knew researchers use EMIS but gave different uses of EMIS by researchers whom they knew used the system.

Researchers according to 13(33.3%) respondents in Table 14, knew that EMIS is used for monitoring and evaluating educational indicators. Further, 10(25.6%) also knew that they use EMIS for giving suggestions and proposals to solutions on some research findings on educational matters. Only 5(12.8%) knew that researchers use EMIS for predictions. It is worth mentioning that researchers use EMIS in diverse ways including monitoring and evaluating educational indicators and for giving suggestions and proposals to solutions on some research findings on educational matters because their inputs are likely to bring about reforms, and interventions in the educational sector. Their findings may come with sweeping innovations which are most needed in the educational field for transformation in this era of technology.

**Table 15: Perceived Main Uses of EMIS by UNESCO**

Uses of EMIS	Frequency	Percentage (%)
For planning, budgeting, monitoring and evaluation of educational indicators	8	22.9
Use data for further research work to inform areas move assistance and improvement	4	11.4
Assisting the educational sector through training, resourcing and provision of infrastructure	17	48.6
Monitoring educational indicators against other nations and international standards	4	11.4
Use EMIS data as basis for securing funds for educational improvement	2	5.7
<b>Total</b>	<b>39</b>	<b>100</b>

Table 15 shows the total number of respondents who knew that the institution under discussion use EMIS. Thirty-nine out of 48 respondents knew UNESCO use EMIS but gave different uses of EMIS by UNESCO. The most significant frequencies of interest here are the extremes. From Table 15, only 2(5.7%) respondents knew that UNESCO use EMIS data as a basis for securing funds for educational improvement. On the other hand, 17(48.6%) respondents thought that one of the main uses of EMIS by UNESCO is used in assisting the educational sector through training, resourcing and provision of infrastructure. In a report, it was mentioned that the current EMIS software was a web-based system that was delivered by UNESCO Institute for Statistics (UIS) in 2007 to replace a Microsoft based system delivered by the Harvard University [6].

## Conclusions

To conclude, EMIS is not just a data warehouse for collecting educational data but goes beyond that to support in planning and making educational policies. The data gathered saw some of those who look through the lenses of EMIS. They are, the Ministry of Education, Ghana Education Service, and UNESCO, Researchers, NGOs, Teachers, Headteachers, to mention but a few. Their list may not be exhaustive because, there may be other direct or indirect uses by individuals and institutions that also look through the same lenses but are not yet noticed. One thing that runs through the tables is that EMIS is used for planning, budgeting, monitoring and evaluation of educational indicators. This is one way of how the educational players look through the lenses of EMIS. The history of Ghana's educational development and recent case studies all point to the fact that the distribution of educational resources especially, material inputs, teaching personnel, and hi-tech facilities, have always been skewed in favour of some section of the society [24,25,26]. This situation may be acceptable because if EMIS is not known among some section of the society, it is likely not to be beneficial to them likening it again to the lenses. If EMIS has the potential of giving information on the state of resources, teaching personnel, etc., but not known, the tendency of resources allocation may be skewed in favour of some section of the society who will take advantage and use it because they knew about it. From Table 12, respondents thought parents do not know about EMIS and this is likely to affect negatively, the way they utilise and see through the EMIS lenses.

This situation may be accepted only because EMIS is not known among some section of society. If EMIS has the potential of giving information on the state of material inputs, teaching personnel, etc, then it is fair to conclude that this is not been used to allocate resource fairly.

## Recommendations

Based on the results and particularly on the conclusion of the study, the authors wish to recommend the following:

1. The EMIS office, Ghana Education Service and the Ministry of Education should do further research into the users and utilisation of EMIS to know how EMIS can be reviewed for maximum utilisation.

2. The general public must be encouraged to look through the lenses of EMIS for all educational related information in Ghana in order to improve upon the educational system.
3. The national EMIS office must make available to the public, leaflets, bulletins and periodic newsletters about objectives and operations of EMIS as part of their information dissemination strategy.
4. EMIS must have a dedicated and reliable website where users, patrons, researchers and stakeholders can easily rely on educational information.
5. The title such as “Statistics Office” must be changed to “EMIS Office” while “Statistics Officer” also be changed to “EMIS Officer”.
6. All Parents must be encouraged to look through the lenses of EMIS to make prudent educational decisions rather than relying on uninformed sources or guesses.
7. Since Regional/ Metropolitan/ Municipal/ District Directors of Education are the most widely users of EMIS, further training on EMIS must be given to them for a more exhaustive usage of EMIS for managing educational information systems, planning and policy making.

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