

Factors Affecting Utilisation of EMIS in Curriculum Implementation in Public Secondary Schools: A Case Study of Masinde Muliro Memorial Secondary School, Trans Nzoia West Sub-County, Kenya

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DOI: 10.29322/IJSRP.8.11.2018.p8338

<http://dx.doi.org/10.29322/IJSRP.8.11.2018.p8338>

Abstract: *This research was carried out to determine factors affecting utilisation of EMIS in curriculum implementation in public secondary schools. Thereafter the findings would be generalized to other public secondary schools in Kenya. The main argument is that ICT under its component EMIS is a prerequisite tool for globally competitive quality education. The study was conceived due to the factor that several parts of secondary school were attempting to provide ICTs, however, utilisation of EMIS in curriculum implementation, examinations, finances and students' enrolment seemed to be challenging because of several factors. To achieve this, the study had five research objectives. The study adopted a case study design targeting the principal, deputy principal and heads of department in Masinde Muliro Memorial Secondary school, Trans Nzoia, Kenya. This is because they were viewed as information rich cases. Data were collected using questionnaires as research instruments. Findings indicated that there is a value attached to ICTs and EMIS utilisation in curriculum implementation. The researcher recommends that schools be equipped with adequate ICT facilities and resources. Besides, teachers should go for capacity building in ICT skills and schools to adopt the national ICT policy and plan for its implementation.*

Key words: Curriculum Implementation, Educational Management Information Systems (EMIS), Information and Communications Technology (ICT), ICT Adoption, Innovations, Software as a Service (SAAS)

1.0 Introduction

Globally, massive educational expansion witnessed in recent years and the rapidly changing times and needs of society demand that school principals, teachers and other personnel

perform decisively to match these changed circumstances. They need to be trained well to handle the new trends in the curriculum. Besides, schools should have adequate facilities like computer rooms, ICT equipment, and good terms of service (Barasa, 2007). All organisations, schools not excluded, cannot do without EMIS, which entirely depends on ICTs in school (ICT Task Force Series 8, 2005). Utilisation of EMIS ensures proper communication networks in school (Morjolein and Martina, Aug., 2008). When it comes to curriculum matters like planning future-oriented goals and objectives of the school, decision-making process that incorporates all stakeholders, controlling, organizing, directing, and other curriculum oriented processes, EMIS is required (Osodo, Indoshi and Ongati, 2010).

In Africa, the major objective is to create ICT readiness and utilisation in school curriculum implementation (UNESCO, 2012). According to Mangal (2009), it is interesting to note that even though a number of developing countries have initiated EMIS, utilising it in curriculum implementation came with challenges like lack of technology applications, computer infrastructure and clear ICT policy system. These challenges call for more research in this area. In South African schools, one of the most important obstacles of the applications of MIS is the inadequacy of the numbers of the computers (Pelgrum and Law, 2003; Mentz and Mentz, 2003).

In Kenya, schools require tremendous input of EMIS (Menjo & Boit, 2005). The GoK has extended internet and MIS in the education sector so as to ensure effective and efficient curriculum implementation. The problem, however, is that the penetration of ICTs into public secondary schools is still very low. There is disparity in ICT infrastructure where institutions in urban enjoy the benefits of ICT whereas the small

institutions in rural are still locked out of the information era (The Standard, Mon., March 29, 2010).

1.1 The case study of Masinde Muliro Memorial Secondary School

Just like all other secondary schools, Masinde Muliro Memorial operates within a given locality with its particular material resources, decision-making procedures and philosophical orientations. All these factors interact with each other in a social system that requires EMIS for purposes of curriculum implementation. However, the challenge is that there is underutilization of EMIS in the school in curriculum implementation.

1.2 Statement of the problem

Despite the efforts by the GoK in paving way for ICTs and adopt EMIS utilization in curriculum implementation, most schools are unable to utilize EMIS (UNESCO, 2012). The slow extent to which EMIS is being utilised in schools needs to be adequately addressed.

1.3 Research objectives and questions

The following are the objectives of the study:

- i. To assess the current status of ICT infrastructures in school
- ii. To find out the status of EMIS utilization in school
- iii. To suggest possible measures for improving utilization of EMIS in curriculum implementation
- iv. To investigate the factors hindering EMIS utilization in curriculum implementation process in school
- v. To find out the ICT services being utilized for curriculum implementation in school

The following research questions were formulated from the stated objectives:

- i. Which ICT infrastructures are available for use in curriculum implementation?
- ii. What is the status of EMIS utilization school?
- iii. What measures can be taken to improve utilization of EMIS in curriculum implementation?
- iv. What are the factors hindering EMIS utilization in curriculum implementation in school?
- v. Which ICT services are being utilized for curriculum implementation in school?

1.4 Hypothesis of the study

If EMIS is implemented, there will be effective utilization.

1.5 Scope of the study

Trans Nzoia West Sub-County is one of the locations where the utilization of EMIS in curriculum implementation is limited (RoK, 2018). This reckoned the need for the study.

2.0 Literature review

The force driving globalization in the 21st Century is undoubtedly ICT (UNESCO, 2012). Information and Communication Technology (ICT) has become the most

important issue in the field of current educational theory and practice where many countries of the world are now focusing on applying in education (Ndemo, 2010). This reckoned the need to understand what ICT entails and its specified aspect integrated in school curriculum for the sake of the study.

Torero and Braun (2006) cited in Ngoma, (n.d) have defined ICT as the computing industry (hardware, software, networks, the internet and related services); electronic data, processing and display (such as photocopiers, cash registers, calculators and scanners as well as myriad of less-well known machines specifically tailored to production and manufacturing); telecommunication and related services (such as fixed and cellular telephones, facsimile machines, instant messaging and teleconferencing). For the need of this study, the focus was mainly on the EMIS utilisation in curriculum implementation, a component that requires computers and internet connectivity for implementation to take place effectively.

To recognize EMIS utilisation in curriculum implementation, the Kenya's 2010-2015 strategic plan focused on developing physical ICT infrastructure and maintenance of ICT tools and equipment in schools. This was for the purpose of equipping teachers with computer skills as well as utilising EMIS in the school curriculum implementation (GoK, 2015). From the reviewed literature, principals and teachers in public secondary schools in Kenya should work with the new technological programs like EMIS (Mumbua, 2009).

3.0 Research methodology

Research design

The study adopted specifically a case study design (Best and Kahn, 2006). The major criterion was of using the case at hand for further generalisations in other public secondary schools as social institutions (Orodho, 2009). The researcher collected information about respondents' attitudes, opinions, habits or a variety of education or social issues as per the requirements of EMIS.

Target population

The target population constituted 1 principal, 1 deputy principal and 6 heads of departments, hence, a total population of 8 persons (MoEST, 2017). They are rich with ICT and EMIS information; hence oversee the utilization of EMIS in curriculum implementation.

Sampling technique

Credibility of the study was judged by its sampling technique (Kothari, 2004). The study adopted a purposive sampling technique whose major criterion was of using adequate number of respondents, that is, a sample size of 1 principal, 1 deputy principal and 6 heads of department.

Data collection and analysis

To determine instrument reliability, the raw scores obtained from principal's interview schedule, and questionnaires for deputy principal and HODs were summarized, coded, edited and synthesized to reveal the essence of data (Mbweza, 2006).

4.0 Research findings and discussion

The researcher was able to administer principal's questionnaires and 6 HODs' questionnaires. All questionnaires were returned dully completed. These questionnaires were then

analyzed and interpreted. The findings comprise the information obtained from analyzed questionnaires, observational checklist, interview schedule and literature review. The findings are reported on the basis of the questions formulated from research objectives.

Question 1: Which ICT infrastructures are available for use in curriculum implementation?

In order to answer this question, it was prerequisite for the researcher to establish whether respondents were engaged in any observable EMIS utilization in school curriculum implementation. It was therefore necessary to find out on the availability and distribution of computers in school and any future plan of acquiring more ICT facilities. The principal and HODs indicated that at least there was a representation of teachers seen to be engaged in ICT integration in school curriculum and that the school had a plan of constructing a computer laboratory and equipping it with computers. But the problem was availability of computers and internet connectivity to enhance EMIS utilization. That is the main issue that this study sought to establish.

Question 2: Which ICT services are being utilized for curriculum implementation in school?

This research questions was basically concerned about other ICT devices used in school for teaching and learning. Respondents were to identify other ICT media education devices beside computers that were being used to equip learners with ICT skills to improve the quality of education. The results indicated that smart phones, television and photocopiers were the commonly used ICT media education devices in school. Tape-recorders, telephone and video were used to a smaller extent. This indicated that ICT integration in school curriculum was being realized but the problem was the factors impeding the process of EMIS utilization in curriculum implementation.

Question 3: What are the factors hindering EMIS utilization in curriculum implementation?

In order to identify the factors hindering EMIS utilization in curriculum implementation, the principal and teachers were asked to state the factors. From their statements, the respondents considered inadequate funds, poor connectivity of electricity, small rooms, lack of clearly revised ICT policy in the school, and inadequate ICT materials as hindrances to EMIS utilization in school curriculum implementation. Statements from the respondents indicate that if the factors can be worked on and improved, they would be very important determinants for ICT integration and hence for EMIS to succeed.

Question 4: What measures can be taken to improve utilization of EMIS in curriculum implementation

This question aimed at capturing possible measures to improve EMIS utilization in curriculum implementation. The results indicated that the principal and teachers recommended for teacher in-service courses on ICTs and EMIS utilization. This is an important aspect because if teachers were allowed to go for in-service courses on ICT, they would be comfortable to apply the skills on how to utilize EMIS in curriculum implementation. They also advocated for the need to equip the schools with power, build computer laboratories, and specialists to assist them in case of a problem.

5.1 Conclusions

The study found that the utilization of EMIS in curriculum implementation, given the right conditions, would provide teachers and principals with opportunities to improve professionally. These teachers and principals would then transform education and help students acquire confidence and pleasure in new technologies by being familiar with ICTs and EMIS application skills for problem-solving, information gathering and interpretation. The study established that there is no one factor that can be exclusively attributed to the utilization of EMIS in curriculum implementation. The factors are interrelated. Teachers and the principal emphasized the need for equipping the school with power, building computer, laboratories, and government sponsorship for purposes of EMIS utilization in curriculum implementation.

5.2 Recommendations

For the utilization of EMIS in public secondary schools to be realized, there was need for the study to provide recommendations that would guide policy-makers. The recommendations are therefore divided into those with policy implications and those meant for further research.

5.2.1 Policy implications

- (i) Training of teachers in ICT applications and software programs for curriculum implementation should be undertaken by KEMI, colleges and universities.
- (ii) The GoK should collaborate with CFSK, NEPAD and other legalized Development Partners to equip schools with adequate ICTs.
- (iii) Public secondary schools should adopt the national ICT policy.

5.2.2 Recommendations for further research

The following are recommended areas for further research basing on this study:

- (i) The role of KEMI in EMIS utilization in school curriculum implementation as perceived by principals and teachers.
- (ii) The initiative of ICT mobile laboratories in stimulating demand for EMIS utilization in curriculum implementation.

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