

An Assessment of the Influence of Utilization of Information and Communication Technology (ICT) on Students' Performance in History & Government of KCSE in Public Secondary Schools in Embu County

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Abstract: *The students' performance in History & Government in Kenya Certificate of Secondary Examination in Embu County has been low over the last ten years. Despite, the various interventions, low performance persists. The purpose of this study is to assess how utilization of Information Communication & Technology (ICT) affect Students' Performance in History & Government. The study was guided by the instructional design and the education production theories. The research employed mixed methodology and concurrent triangulation design. Target population of the study was 1541 respondents comprising 1340 form four students taking History & Government, 134 History & Government teachers, 67 principals in public secondary schools in Kenya. The sample size was a total of 328 respondents made up of 20 school principals, 40 teachers and 268 students. The study used stratified random sampling technique to select the schools. Purposive sampling was used to select the principals and the teachers of the selected schools. Random sampling was used to select the students to be involved in the study. Research instruments comprise of questionnaires for teachers and students while an interview guide was used for the principals. Piloting was done in 10% of the schools in Embu County that were not included in the final sample. Content validity of the instruments was ascertained by a team of experts from the Department of Educational Administration and Management of Mount Kenya University. The reliability of the questionnaire was determined using the split-half method. Cronbach Alpha was used to determine the reliability coefficient. A reliability coefficient of 0.07 and above was accepted otherwise, it was revised. Dependability of the qualitative instrument was ascertained using detailing all the events and asking a team of experts to audit while credibility was established through data triangulation. Data was analyzed quantitatively using both descriptive and inferential statistics. Descriptive statistics included percentage, mean and standard deviation. Inferential statistics included correlational and regression analysis. Analysis of quantitative data was done with the aid of the Statistical Package for Social Science (SPSS) Version 21. The qualitative data derived was analyzed thematically and presented in narrative form. It was concluded that in-service training adequately prepared teachers in the use of the education syllabus although the teachers were inadequate. Based on the findings of the study, the following were the recommendations; There was need for the identification of the resource requirement and assessing quality in terms of the needs and the use of the resources for teaching and learning of history and government in schools in Embu County.*

1. Introduction

The vital role played by secondary education may partly explain the Kenyan government decision to introduce free tuition in public secondary schools in order to increase its demand (Ohba, 2009). Provision of quality secondary education is therefore important in generating the opportunities and benefits of social and economic development (Onsumu, Muthaka, Ngware&Kosembei, 2006). One of the indicators of quality of education being provided is cognitive achievement of learners (United Nations Educational, Scientific and Cultural Organization, [UNESCO], 2005). According to Adediwura and Tayo (2007), academic achievement is designated by test and examination scores or marks assigned by the subject teachers. It could also be said to be any expression used to represent students' scholastic standing. Levin, Wasanga and Somerset (2011) reported that the academic achievement of students at secondary school level is not only a pointer of the effectiveness of schools but also a major determinant of the well-being of youths in particular and the nation in general. Yusuf and Adigun (2010); Lydiah and Nasongo (2009) noted that the performance of students in any academic task has always been of special interest to the government, educators, parents and society at large.

2. Statement of the Problem

This study focused on assessing the influence of utilization of community resources on performance of History & Government in public secondary schools in Embu County. The 8 – 4 – 4 secondary education syllabus is integrated where History & Government forms a part of however this syllabus is too broad to be adequately covered within the time allocated on the time table. Many of the History & Government teachers were trained to teach History & Government and another teaching subject as it is a requirement for teachers employed by the Teachers Service Commission (TSC) to have two teaching subjects. However it is neither clear what kind of community resources are available and utilized for teaching History and Government nor the extent to which they contribute to the performance of this subject at this level in public secondary schools in Embu County.

3. Literature Review

In an attempt to investigate availability and access to the Internet, Kenya School Net [2003] found that email was yet to be recognised as a tool for collaboration among students and teachers. It went on to affirm that in the schools

surveyed, access to the Internet was severely limited and when available was only for administrative use. The study found that almost 40% of these schools had less than 10 computers, and were therefore inadequate for teaching and learning. More than 20 per cent had less than 5 computers, indicating that the computers were mostly for administrative use. Only a third of schools studied had dedicated computer laboratories. Another study by Pádraig Wims and Mark Lawler [2007] looked at the implementation of ICT projects in selected educational institutions with a view to making recommendations on how such projects can be deployed and supported. The findings were from two secondary schools – St. Patrick's High School and Singore Girls' Secondary School – and an agriculture training college, Baraka Agricultural College. The ratios of students to computers in the institution surveyed were: St. Patrick's, 25:1; Singore, 32:1 and Baraka, 4:1. In St. Patrick's, the computer laboratory had 16 working computers, with an average of 1.5 students per computer. Singore had a laboratory of 10 computers, and an average class size of 15, or a ratio of 1.5 students per computer. In Baraka Agricultural College, students had access to a computer laboratory of 12 computers. Only 12 students attended classes at any given time, allowing for a ratio of 1:1.

Kenya cannot afford to lag behind in using multimedia to raise the intellectual and creative resources of her citizens. This is particularly important for children whose adulthood will blossom in a cyber environment entirely different from that of the present (Shavinina, 1997). Kenyan children need to be taught through radically new educational programme and variety of educational contents with multimedia playing key role. However, the prevailing condition in school management in Kenya is disheartening and discouraging. The country seems to be living in prehistoric times in the educational management while even developing countries in Africa such as South Africa, Kenya, Uganda and Tanzania are far ahead of Kenya in ICT applications.

4. Theoretical Framework

The study was founded on two theories: (1) The Instructional – Design Theory and (2) Education Productivity Theory.

4.1 The Instructional – Design Theory

An instructional – design theory is a hypothesis that offers express direction on the best way for people to learn and develop. The sort of learning and development may incorporate cognitive, emotional, social, physical, and spiritual. Perkins, (2011) depicts an instructional – design theory, called "Theory One," which offers the following

guidance for what the instruction ought to incorporate to encourage intellectual learning.

The instruction ought to give clear information, descriptions and cases of the objectives, knowledge required, the performances expected and attentive practice. Opportunity for learners to draw in, effectively and brilliantly whatever is to be learned, for instance, numbers, solving word issues, essay writing and informative feedback input. Clear, exhaustive guidance to learners about their performance, helping them to advance more effectively and a strong intrinsic or extraneous inspiration are vital. Exercises that are sufficiently compensated, either in light of the fact that they are extremely intriguing and engaging themselves or on the grounds that they encourage into different accomplishments that concern the learner are additionally vital Perkins, (1992).

4.2 Research Methodology

The research methodology in this study was the mixed method approach. This kind of studies have emerged from the paradigm wars between qualitative and quantitative research approaches to become a widely used mode of inquiry. Depending on choices made across four dimensions, mixed-methods can provide an investigator with many design choices which involve a range of sequential and concurrent strategies. Defining features of these designs are reported along with quality control methods, and ethical concerns, Terrell, (2012). The mixed methods design was appropriate since the study used both quantitative and qualitative research approaches.

The study employed a concurrent triangulation design. In a concurrent approach the researcher collects both quantitative and qualitative data concurrently and then compares the two databases to determine if there was a convergence difference or some combination Creswell, (2009). The purpose of this design was to obtain different but complementary data on the same topic to best understand the research problem.

The intent in using this design was to bring together the differing strengths and non – overlapping weakness of quantitative methods with those of qualitative methods. The model of the design is shown in Figure 2.

4.2.1 Quantitative Analysis

The study sought to establish the effect of availability and utilization of ICT resources on students' performance in history and government in public secondary schools in Embu County. Principals, teachers and students were asked a set of research questions that sought to find out the same. Findings are presented in the following section.

Table 1: Perceived Challenges to Effective Integration of Information and Communication Technology in Teaching and Learning of History and Government in schools in Embu County

Items	Principals				Teachers				Students			
	Agree		Disagree		Agree		Disagree		Agree		Disagree	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Electric Power Supply	15	75	5	25	27	72.9	10	27	191	76	59	23.6
Lack of Knowledgeable ICT Support Staff	19	95	1	5	35	94.5	2	5.4	226	90.4	24	9.6
Inadequately Trained Teachers	14	70	6	30	29	78.3	8	21.6	200	80	50	20
High Cost of ICT Equipment and Accessories	19	95	1	5	36	97.2	1	2.7	230	92	20	8

Lack of Interest on the part of Principals, Teachers and Students	17	85	3	15	33	89.1	4	10.8	208	83.2	42	16.8
Insufficient Funds	18	90	2	10	32	86.4	5	13.5	209	83.6	41	16.4
Government's Payment of Lip Service to Education	18	90	2	10	35	94.5	2	5.4	232	92.8	18	7.2
Inability to Replace Broken-down Equipment and Facilities	17	85	3	15	34	91.8	3	8.1	227	90.8	23	9.2
Inadequate Telephone Services	18	90	2	10	32	86.4	5	13.5	229	91.6	21	8.4
Lack of Adequate Accommodation for ICT Equipment	19	95	1	5	35	94.5	2	5.4	230	92	20	8

Data presented in the table 15 shows that the following factors were perceived by the teachers and Principals as challenges to the effective utilization of ICTs in teaching and learning of history and government in secondary schools in Embu County. Poor electric power supply received over 70% rating among all the respondents indicating that it was a major challenge. Electricity failure is a persistent problem militating against ICT application and use in Embu County and in Kenya in general as most of the schools are not linked to the national power .

Insufficient funds received a rating of over 80% from all the respondents indicating that it is one of the factors militating against the effective utilization of ICTs in secondary schools in Embu County. Government's payment of lip service to implementation of ICT policies in education received over 90% response from all the respondents. The fact that all the listed ICT facilities were rated available to a very poor extent is a pointer to the fact that they were not available in the schools. This being the case is a further indicator that government is only paying lip service to implementation of her ICT policies.

Inadequate telephone services received above 85% rating from all the respondents. Schools located in areas with poor network coverage will experience ICT connectivity problems. This is the case of most schools in Embu County. Lack of adequate accommodation for ICT equipment received above 95.4% rating from all the respondents. In most of the schools used for the study, it was difficult to find accommodations that can conveniently be used to house ICT equipment and facilities.

4.2.2 Inferential Statistics

Table 2: Correlation between utilization of information community and performance of History and Government

		Utilization of Information Community Technology	Performance in History and Government
Utilization of Information Community Technology	Pearson Correlation	1	.659**
	Sig. (2-tailed)		.000
	N	40	40
Performance in History and Government	Pearson Correlation	.659**	1
	Sig. (2-tailed)	.000	
	N	40	40

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

A correlation analysis was conducted between utilization of information community and performance of History and Government in public secondary schools. The results in table 14 shows that $r=0.659$ which was at 0.00 significant level. Hence the study deduces that there is a positive correlation between utilization of information

communication technology and performance in history and government.

4.2.3 Qualitative Analysis

The study first sought to establish whether a school was endowed with adequate ICT facilities from the principals comment it became apparent that indeed the schools in the study area were equipped with enough learning materials. However, when probed further it emerged that some schools were faced with inadequacy ICT materials. For example respondent PQ1; said.....*As a matter of fact we have enough learning materials but they are not enough for the demanding student population.*

Influence of utilization of teaching and learning materials. The school principals were first asked to indicate whether their respective school had adequate teaching and learning materials especially for teaching history and government. Majority of the respondent said they had learning materials stocked in their libraries. Although they were faced with the inadequacy for instance respondent PQ3 said; *of course there are history and government learning materials stocked in our school library but the biggest challenge we are facing is that books plus other learning materials are not enough for all the students taking history and government.*

The study further probed the school principals to indicate whether the history and government had enough teaching materials to teach the subject from the comments to come clear that the schools in the area were well equipped with history and government learning materials but as usual we could not miss those ones.

For instance respondent PQ4; said that..... *As a school we have tried all our best in ensuring the teachers/students are equipped with necessary materials.....however with overwhelming number of students taking the subject we are faced with shortage of the materials which are not enough.*

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